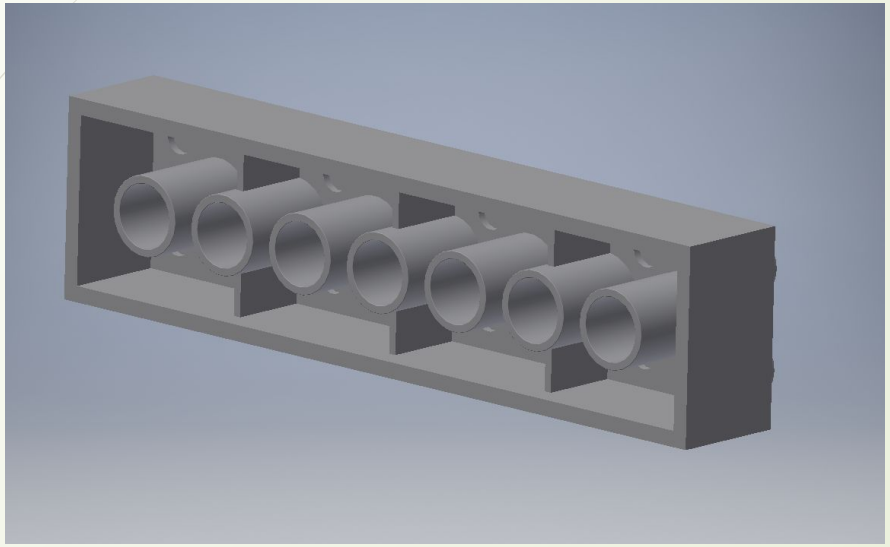
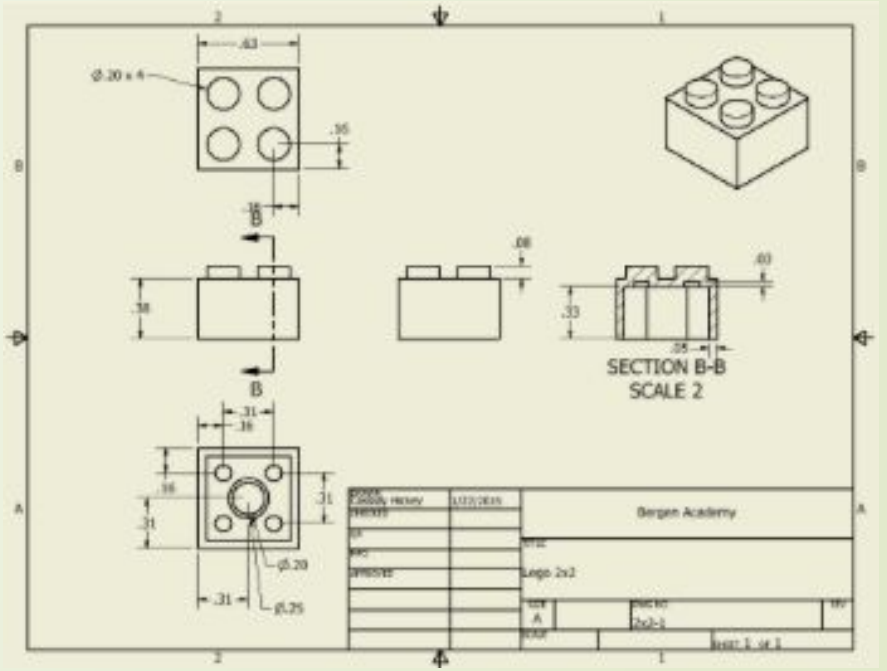
Engineering Portfolio

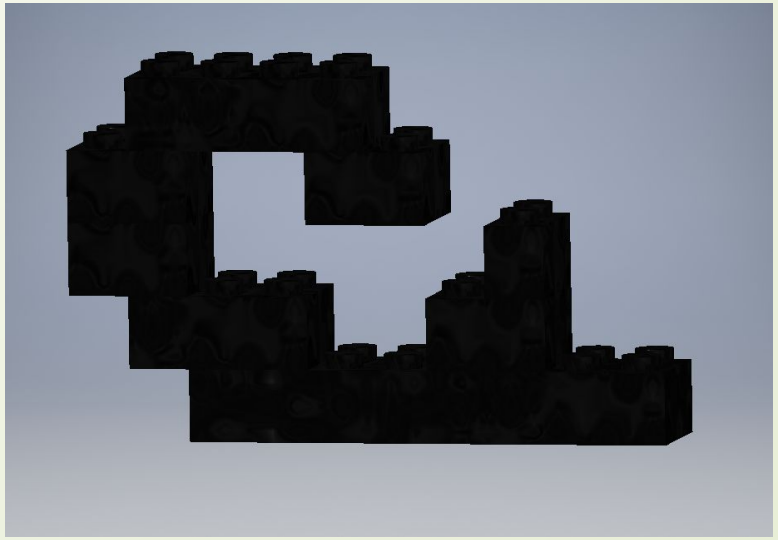
By: Mini Wadhwani

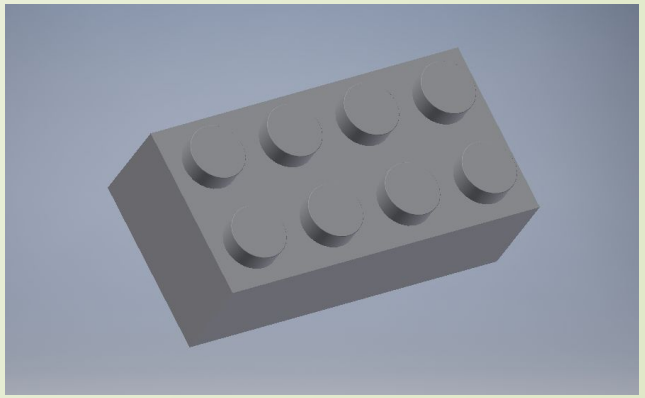
Autodesk Inventor

Lego

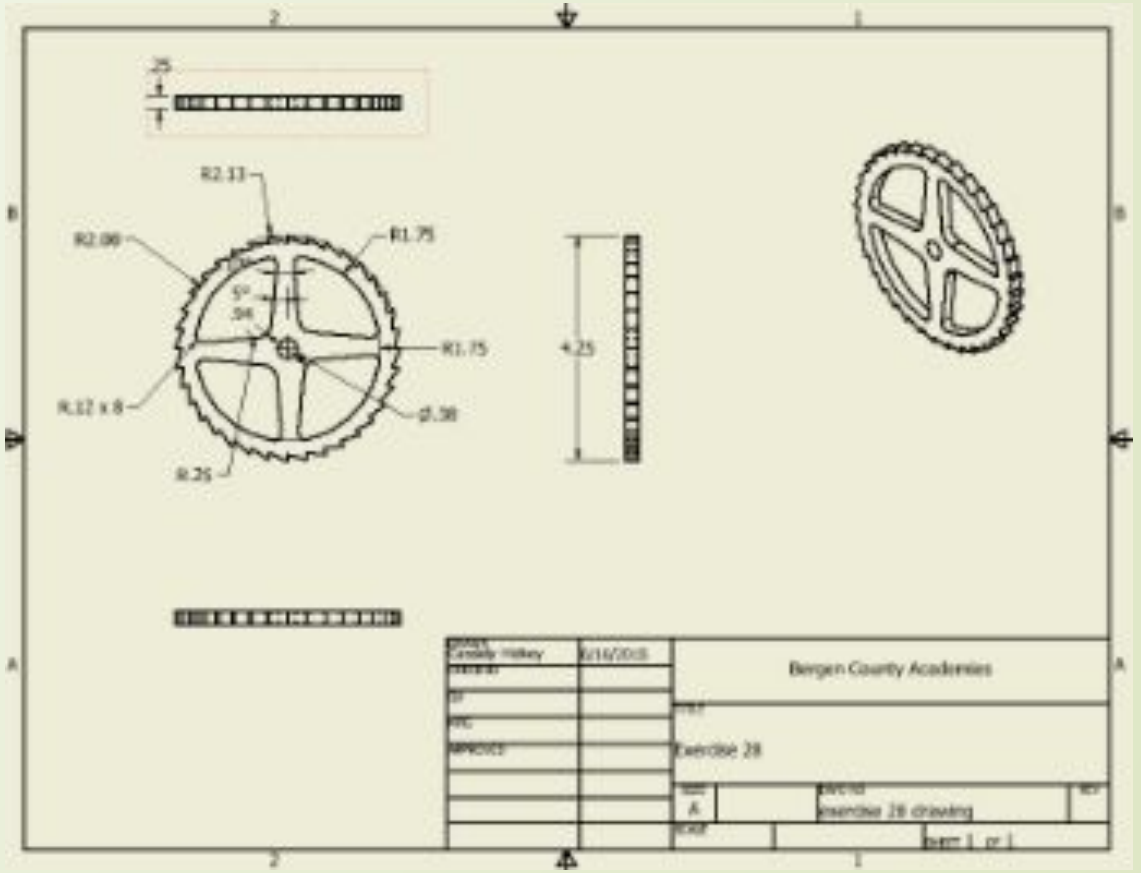




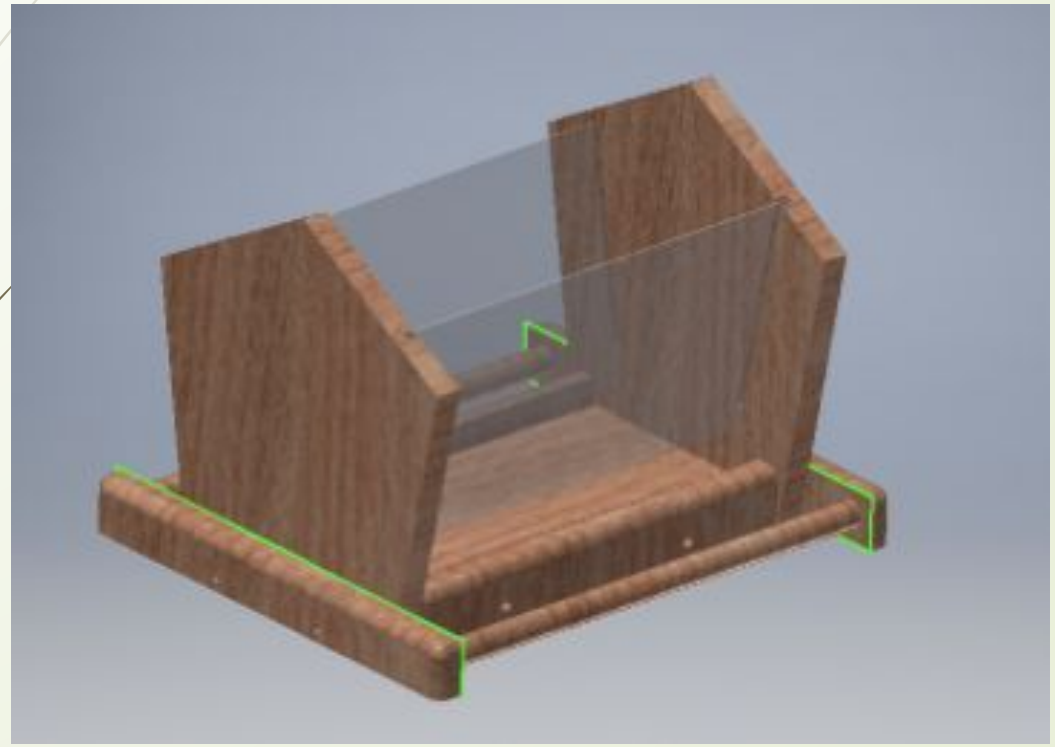


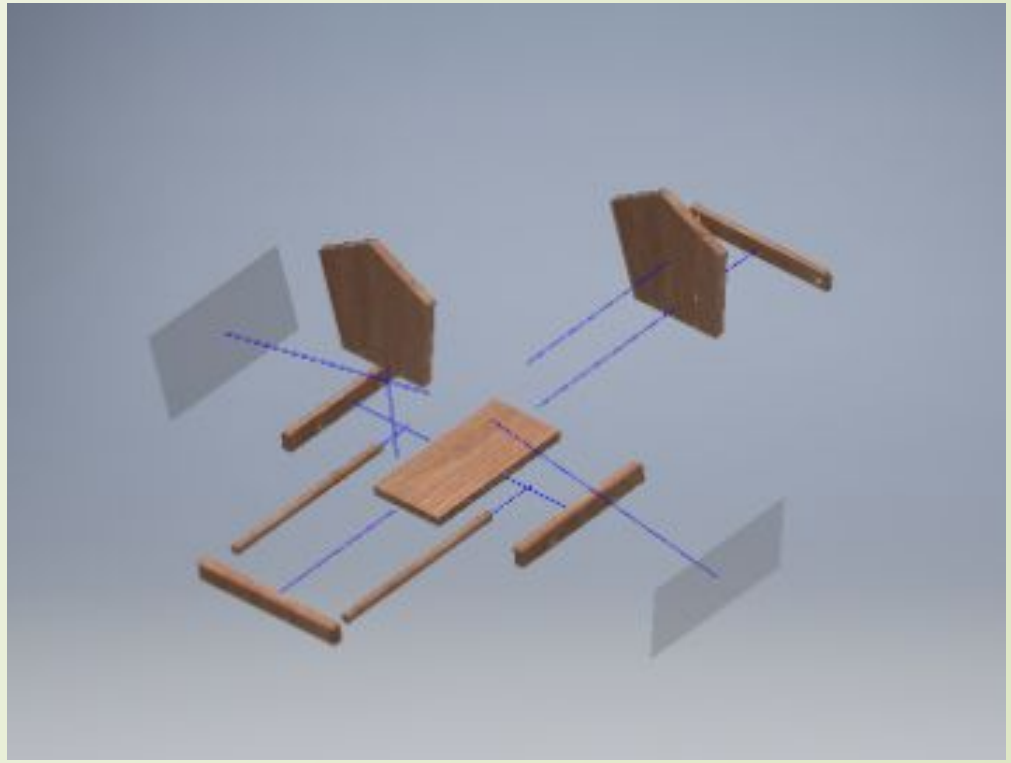


Gear

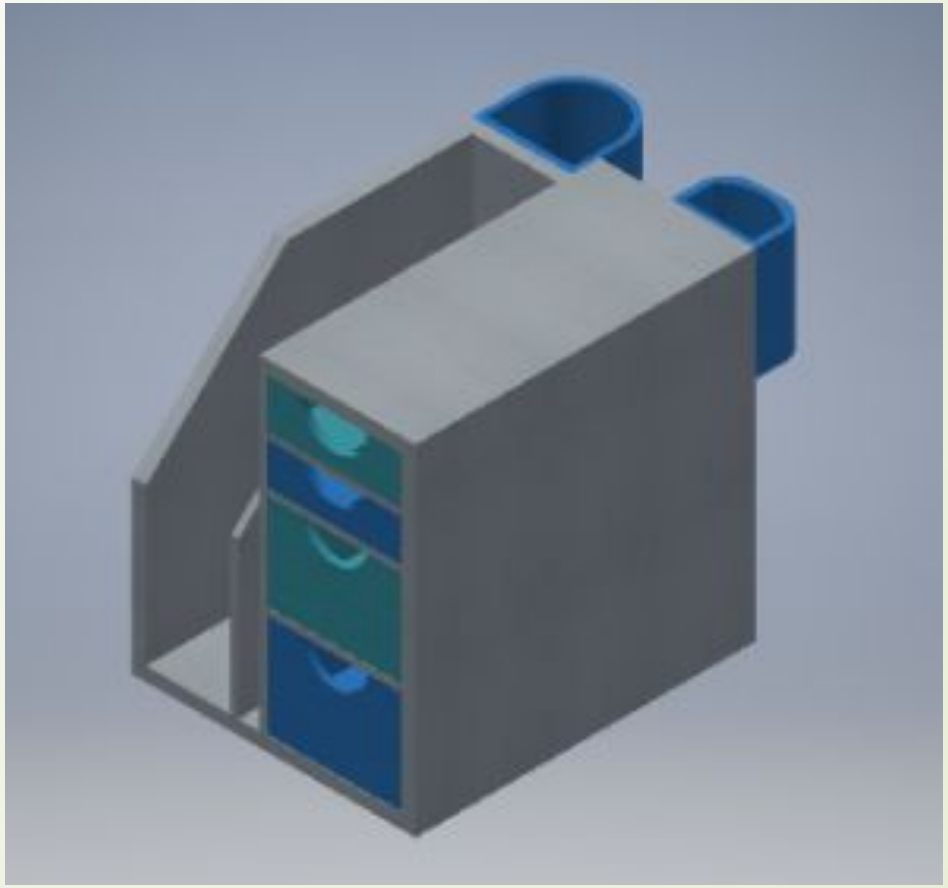

R2.13
R2.00
R1.75
R1.75
R.12 x 8
Ø.38
R.25
4.25
Bergen County Academies
Exercise 28
Exercise 28 drawing

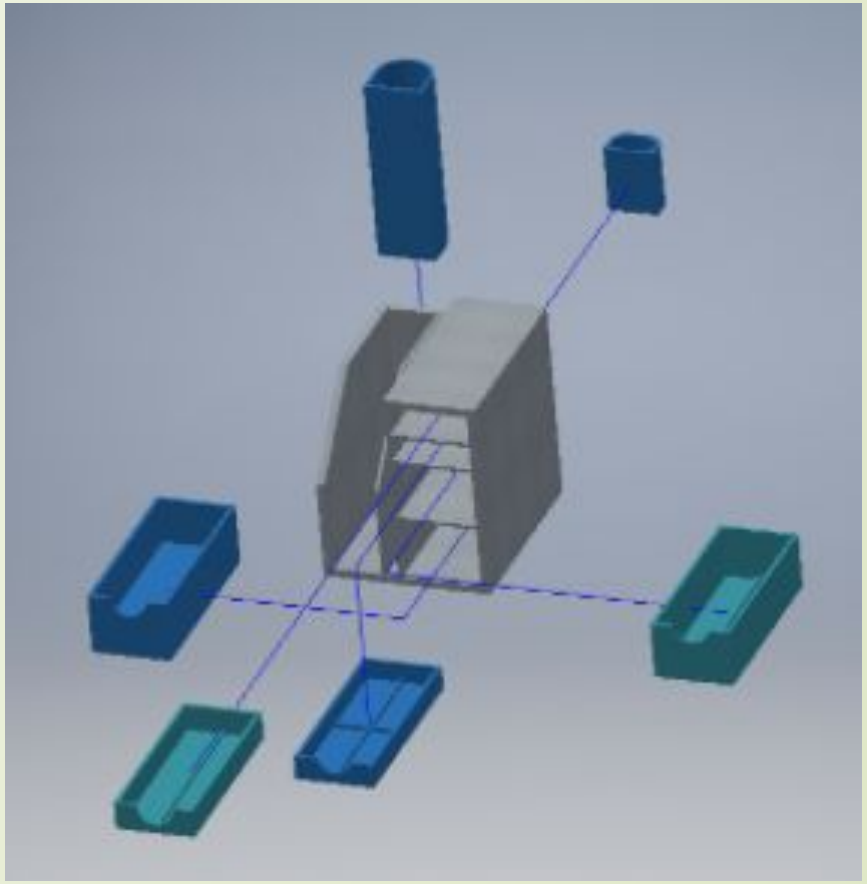
Bird Feeder



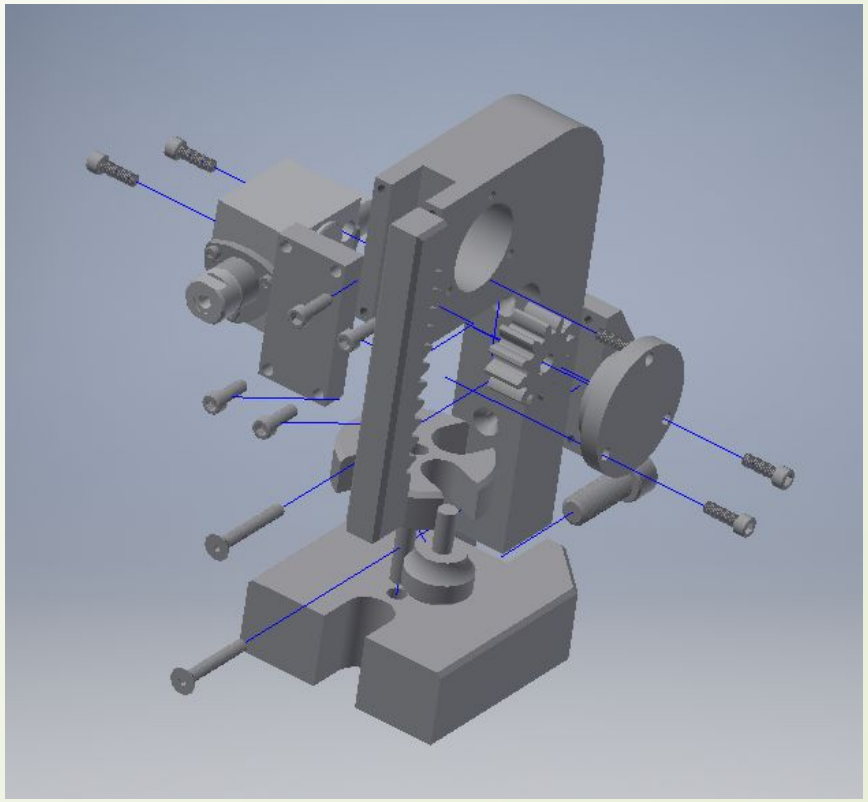


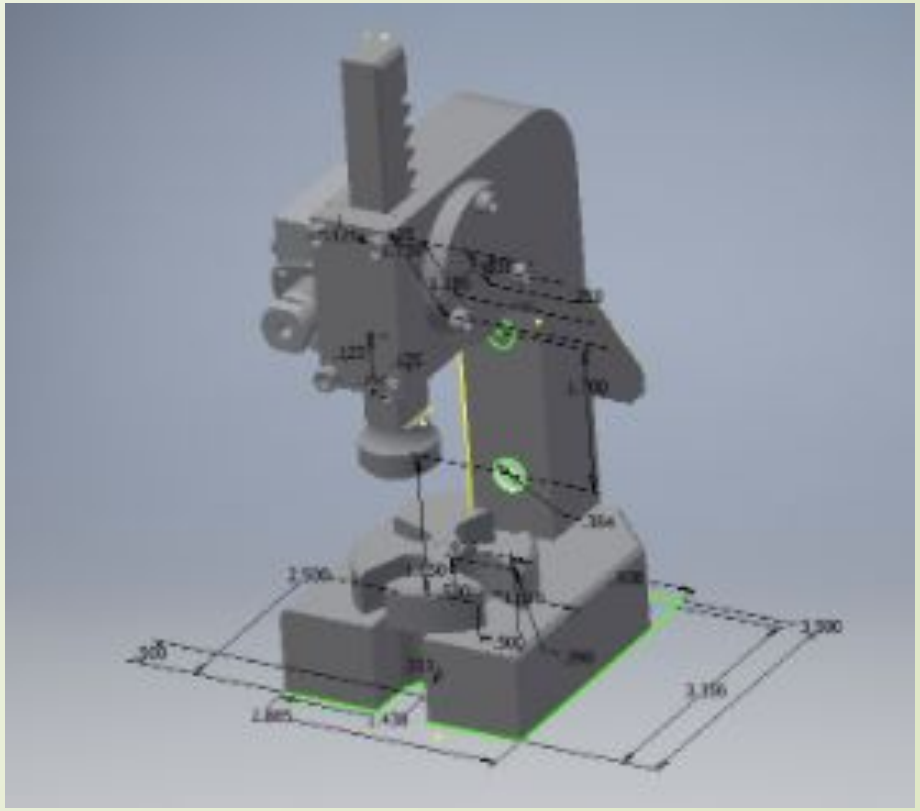
Desk Organizer





Arbor Press

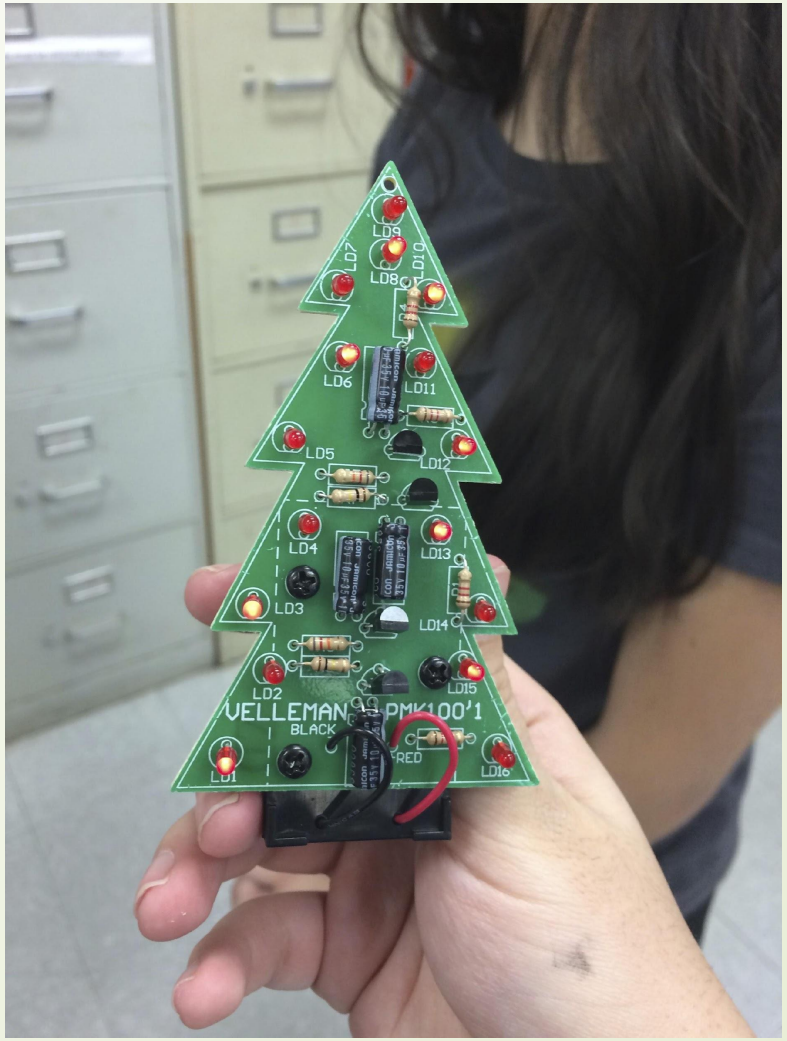


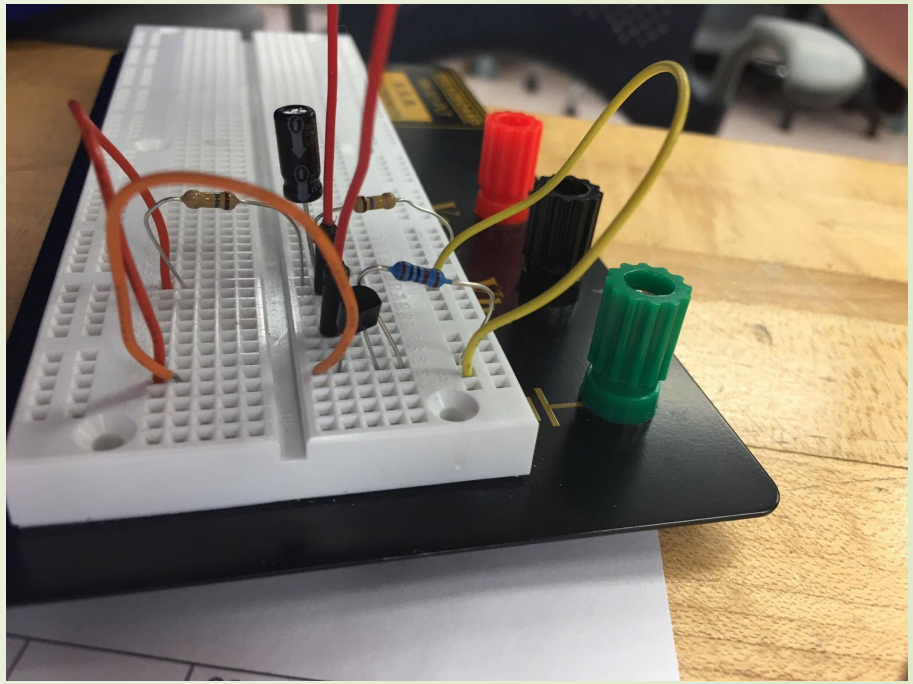


Clock

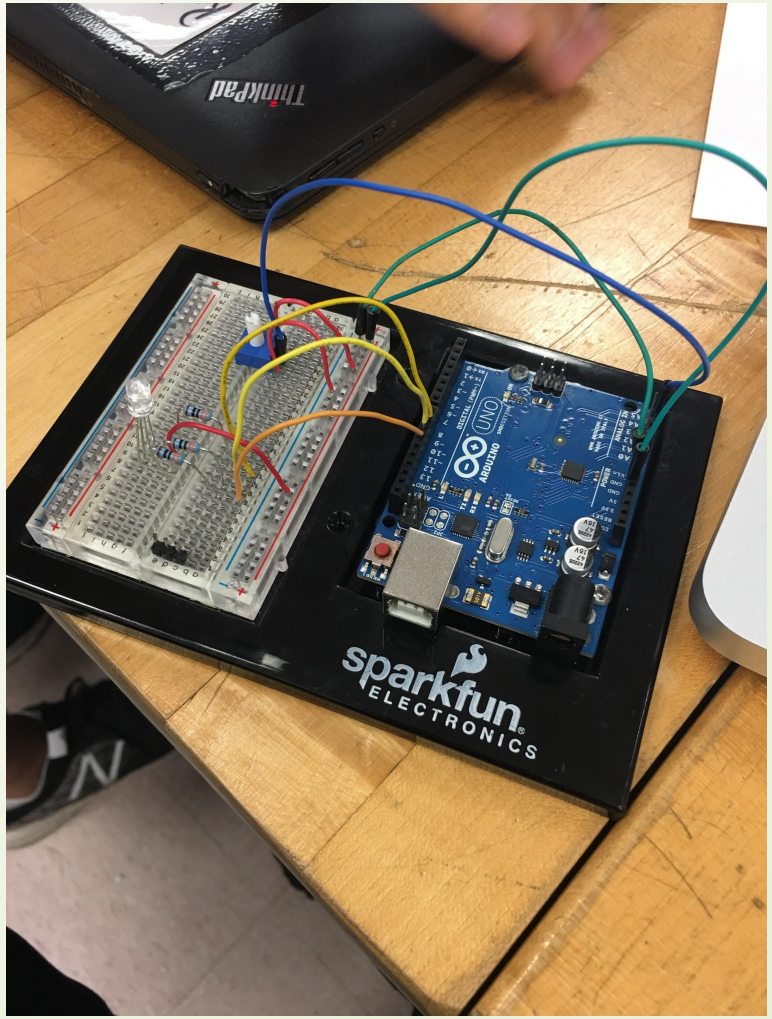
Electronics

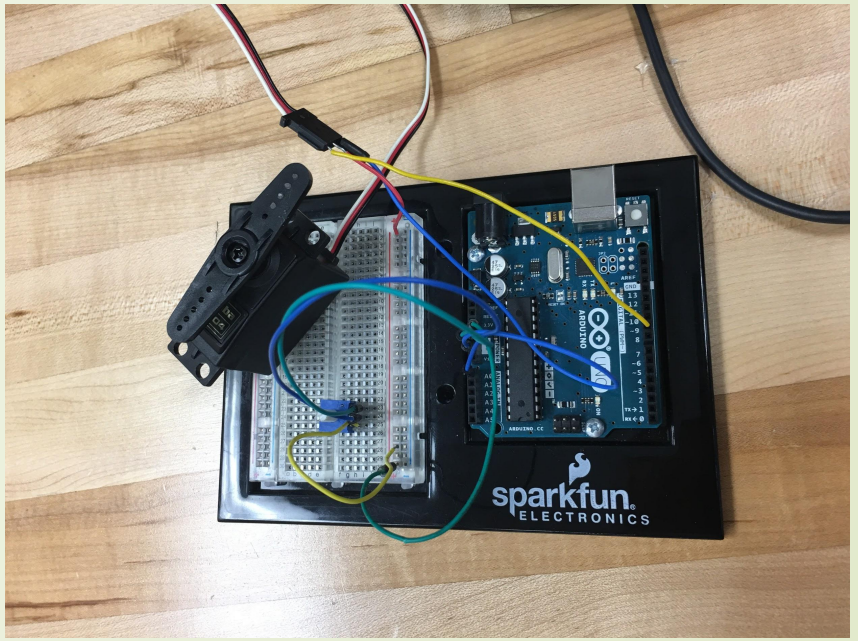
Soldering, Breadboarding

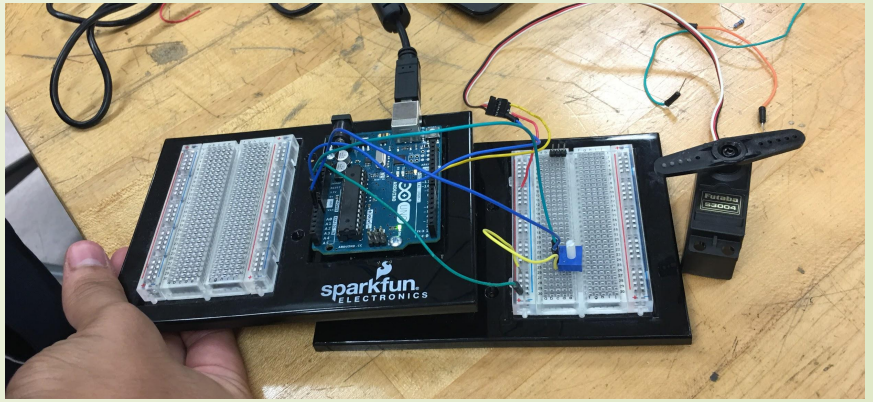




Arduino


ThinkPad
UNO
ARDUINO
sparkfun
ELECTRONICS


ARDUINO
sparkfun
ELECTRONICS


sparkfun
ELECTRONICS

Arduino Code

Multiple_Blink | Arduino 1.0.3

Multiple_Blink

```
int led2 = 12;
int led3 = 11;

// the setup routine runs once when you press reset:
void setup() {
  // initialize the digital pin as an output.
  pinMode(led, OUTPUT);
  pinMode(led2, OUTPUT);
pinMode(led3, OUTPUT);
}

// the loop routine runs over and over again forever:
void loop() {
  digitalWrite(led, HIGH);   // turn the LED on (HIGH is the voltage level)
  delay(100);               // wait for a second
  digitalWrite(led, LOW);    // turn the LED off by making the voltage LOW
  delay(100);
  {digitalWrite(led2, HIGH);
delay(100);
digitalWrite(led2, LOW);
delay(100);}
{digitalWrite(led3, HIGH);
delay(100);
digitalWrite(led3, LOW);
delay(100);}// wait for a second
}
```

Done Saving.

```
Binary sketch size: 1,190 bytes (of a 32,256 byte maximum)
The sketch name had to be modified. Sketch names can only consist
of ASCII characters and numbers (but cannot start with a number).
They should also be less less than 64 characters long.
```

36 Arduino Uno on /dev/cu.usbmodem241121

```
#include <Servo.h>

Servo myservo;  // create servo object to control a servo

int potpin = 0;  // analog pin used to connect the potentiometer
int val;    // variable to read the value from the analog pin

void setup() {
  myservo.attach(9);  // attaches the servo on pin 9 to the servo object
}

void loop() {
  val = analogRead(potpin);            // reads the value of the potentiometer (value between 0 and 1023)
  val = map(val, 0, 1023, 0, 180);     // scale it to use it with the servo (value between 0 and 180)
  myservo.write(val);                  // sets the servo position according to the scaled value
  delay(15);                           // waits for the servo to get there
}
```

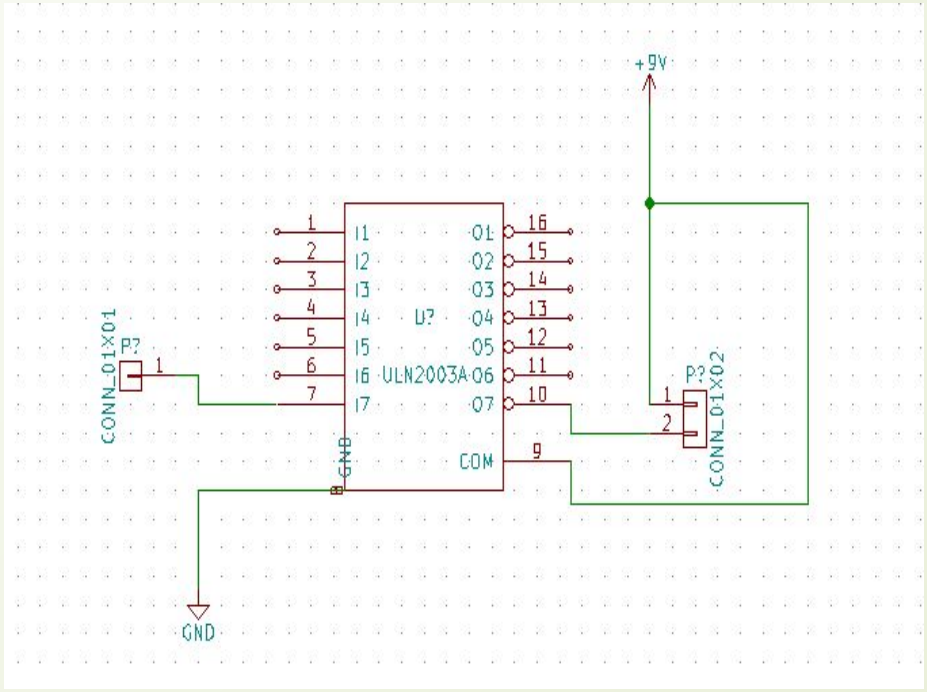
KeyboardMessage | Arduino 1.0.4

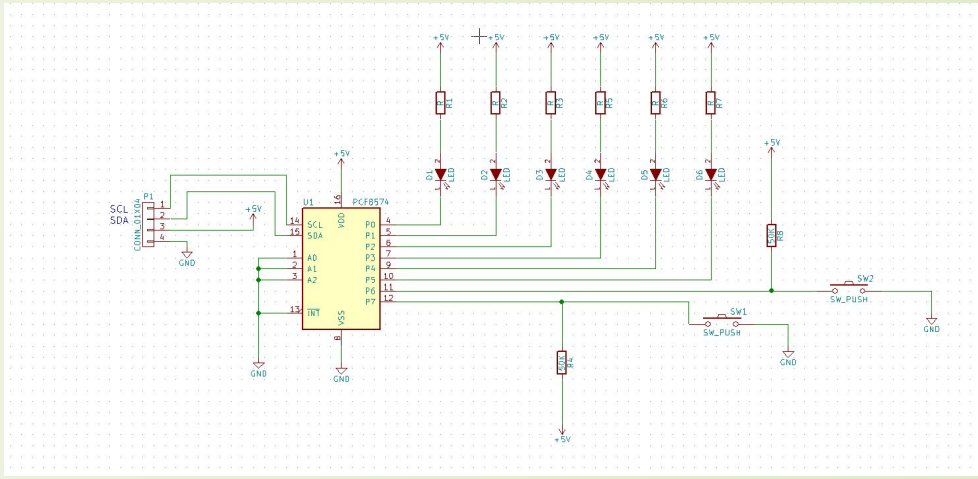
KeyboardMessage

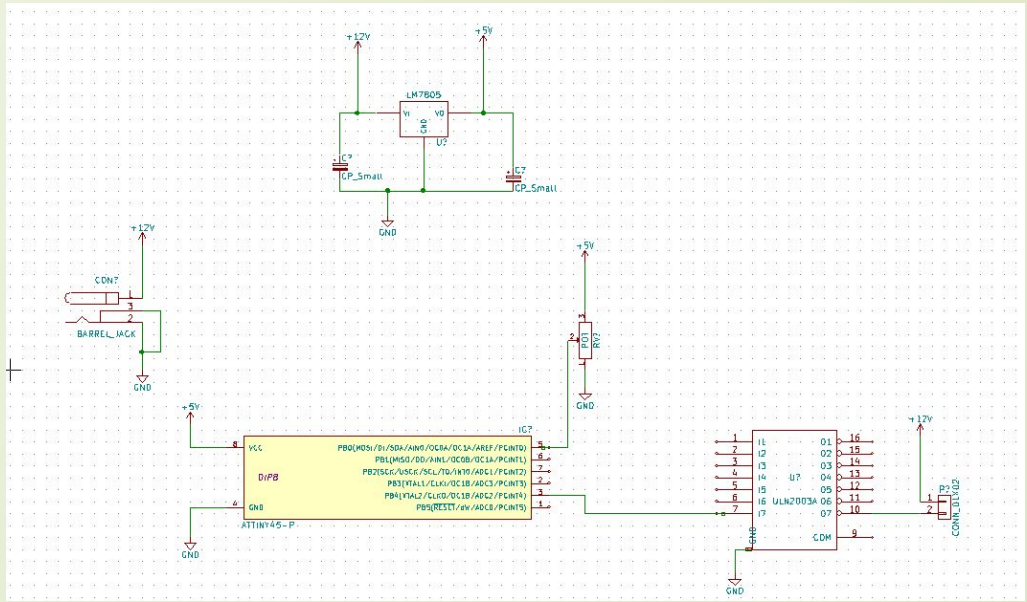
```
const int buttonPin = 2;          // input pin for pushbutton
int previousButtonState = HIGH;   // for checking the state of a pushButton
int counter = 0;                  // button push counter

void setup() {
  // make the pushButton pin an input:
  pinMode(buttonPin, INPUT);
  // initialize control over the keyboard:
  Keyboard.begin();
}

void loop() {
  // read the pushbutton:
  int buttonState = digitalRead(buttonPin);
  // if the button state has changed,
  if ((buttonState != previousButtonState)
    // and it's currently pressed:
  && (buttonState == HIGH)) {
    // increment the button counter
    counter++;
```

27 Arduino Leonardo on /dev/tty.usbmodem1411

KICAD Circuit Design

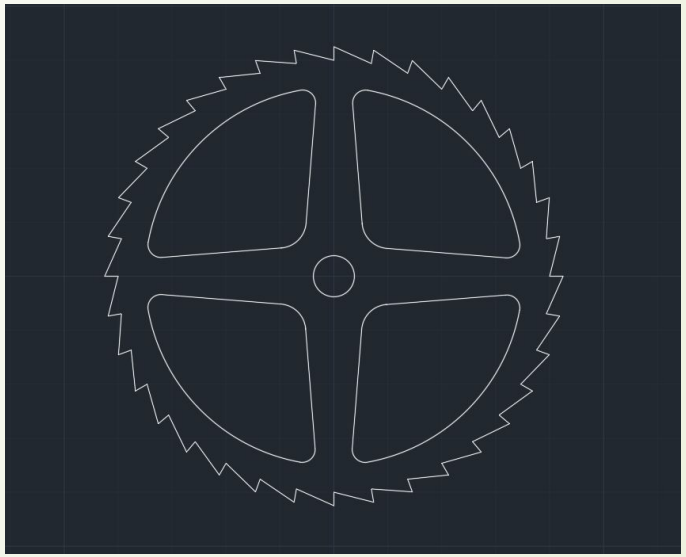


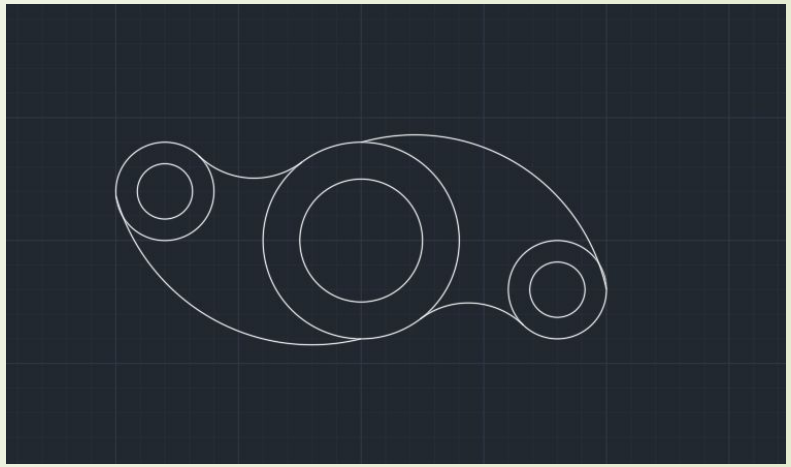


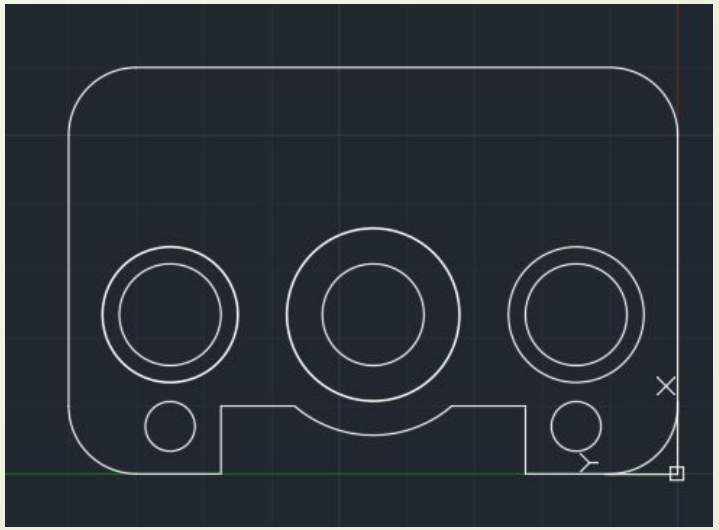


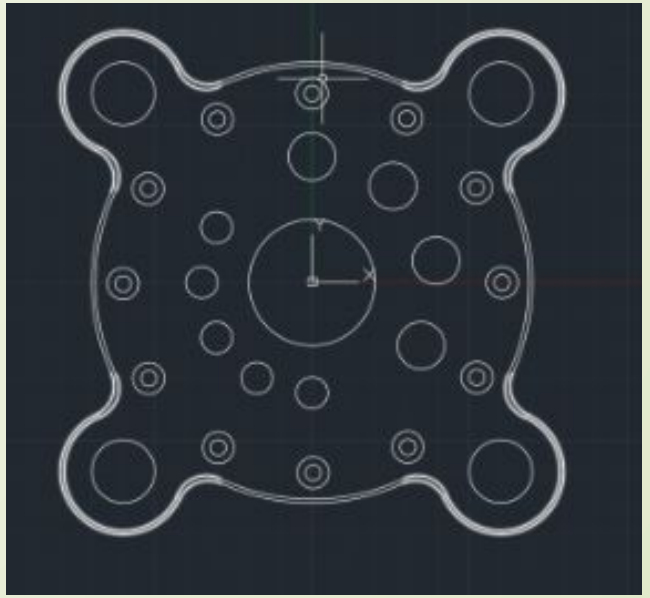
AutoCAD

2D Drawings

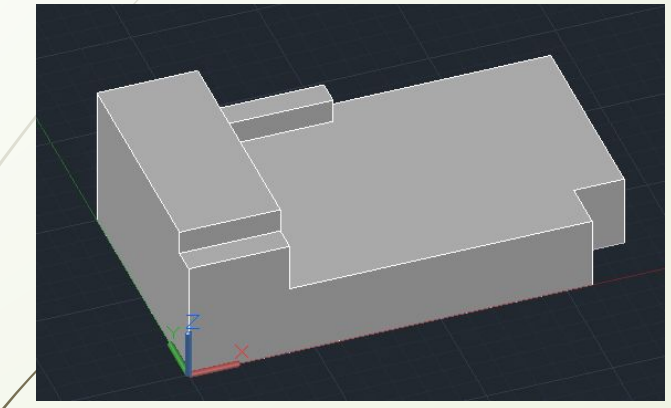


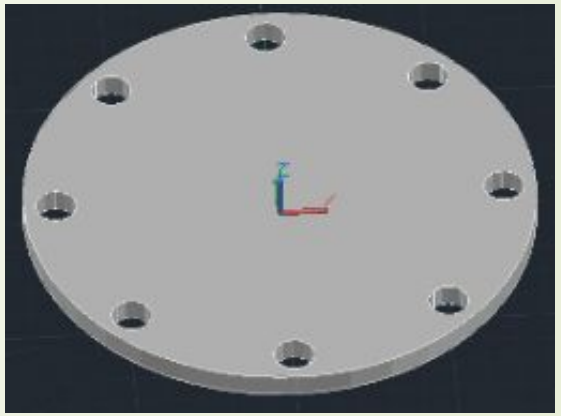


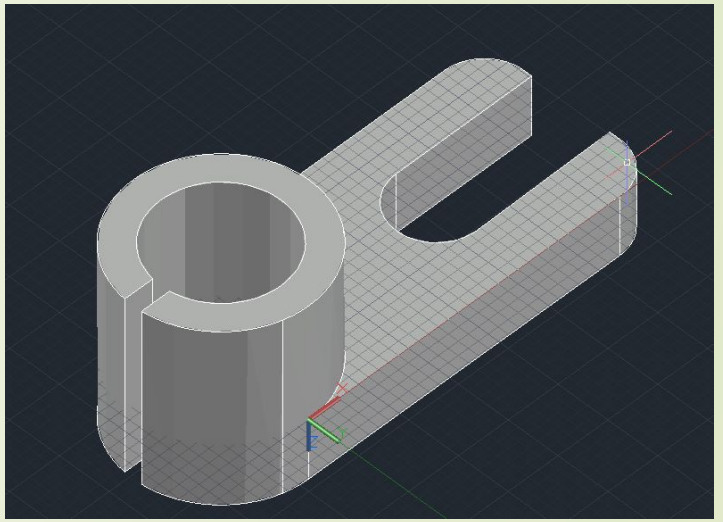


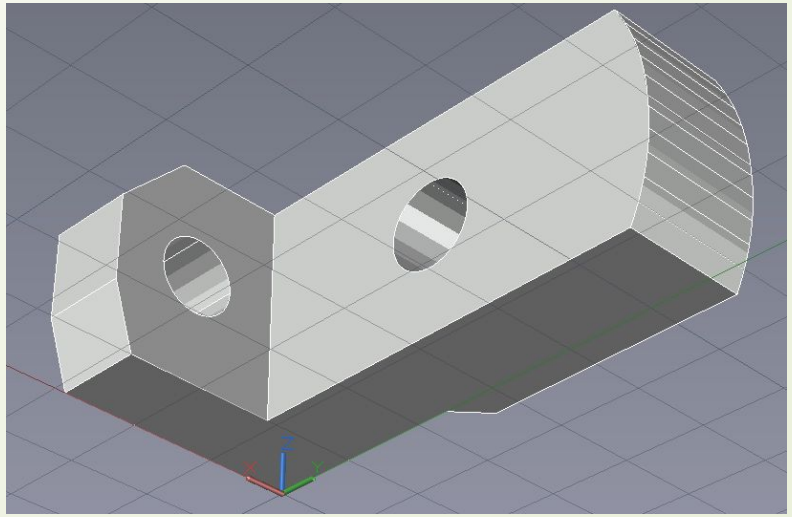


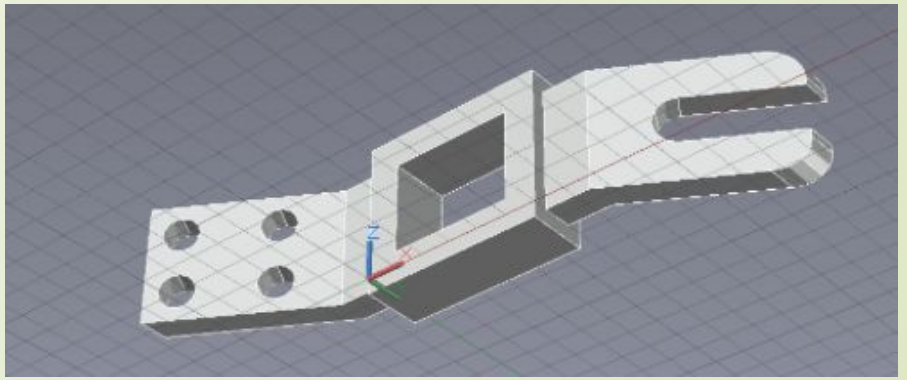
3D Drawings











Computer Integrated Manufacturing

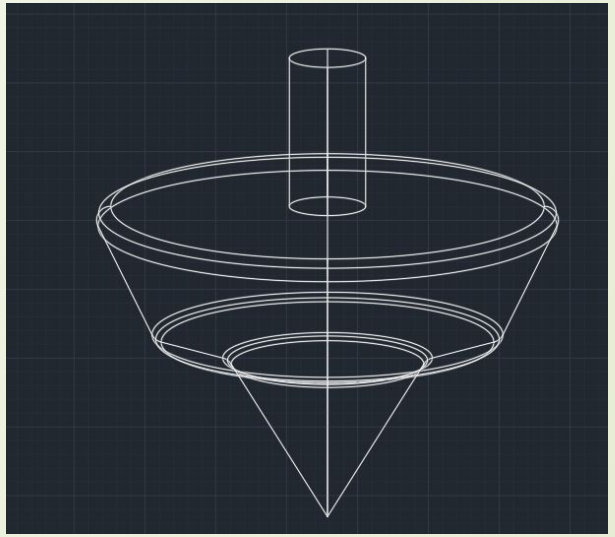
CNC Milling

Initials - Notepad

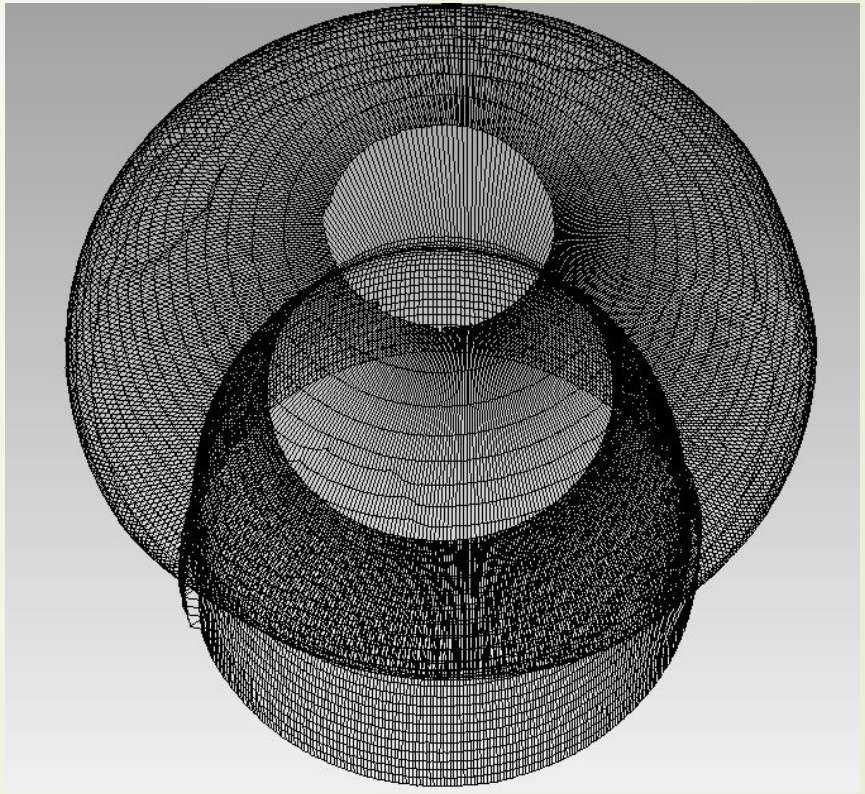
File Edit Format View Help

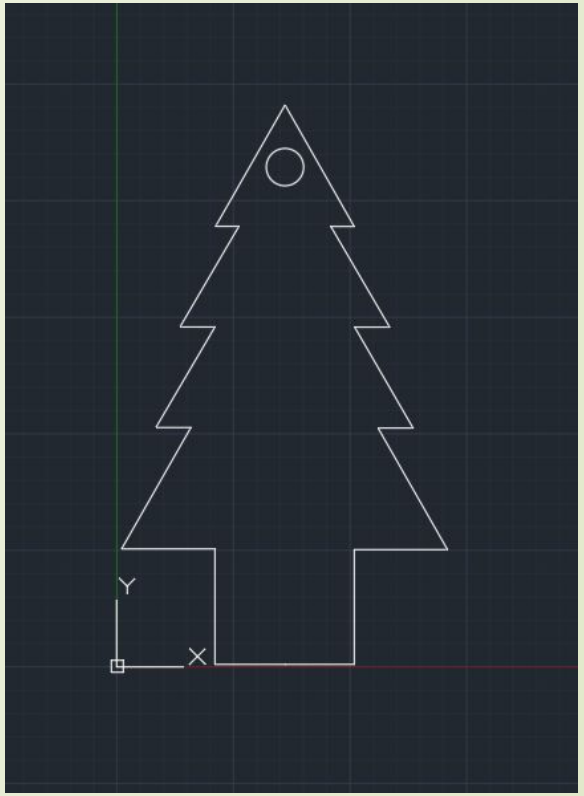
```
'PROGRAM 2 - MW
'
N5G70G90
N10M06T1
N15M03S1000
N20G00Z.2
'
'M
N50G00X0.375Y0.375
N55G01Z-.2
N60G01X0.375Y1.625
N65G01X0.875Y1.1013
N60G01X1.375Y1.625
N60G01X1.375Y0.375
N55G01Z.2
'
'W
N50G00X1.625Y1.625
N55G01Z-.2
N60G01X1.625Y.375
N65G01X2.125Y.8987
N70G01X2.625Y.375
N75G01X2.625Y1.625
N55G01Z.2

'
'BORDER 3"X2"
G00X-.125Y-.325
G01Z-.2F20
G01X-.125Y2.125
G01X3.125Y2.125
G01X3.125Y-.125
G01X-.325Y-.125
G01Z.2
M06M02
'
'
'USE APPROPRIATE LINE NUMBERS FOLLOWING N25
'DELETE LINE SPACES AND SAVE
```

3D Printing

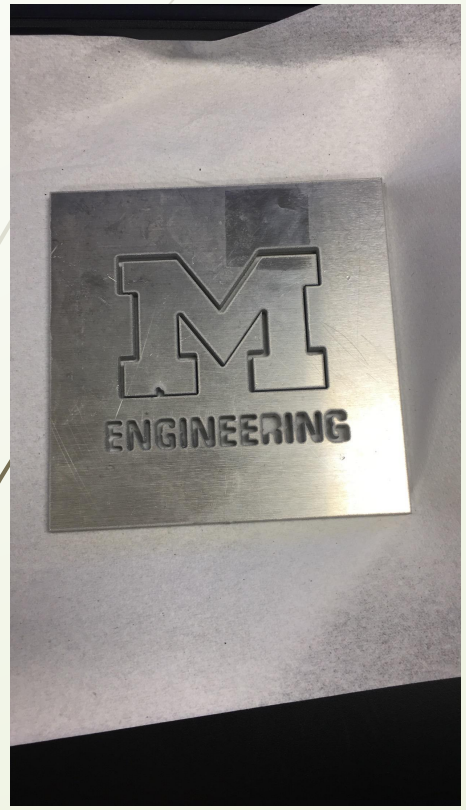


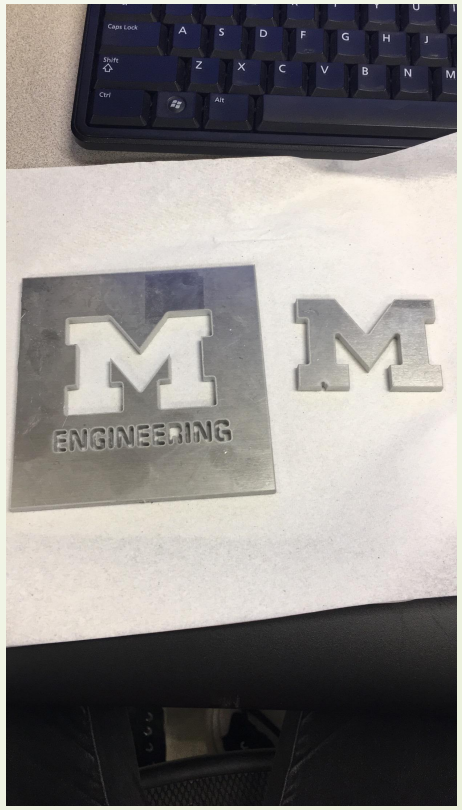
Laser Scanning and Laser Cutting

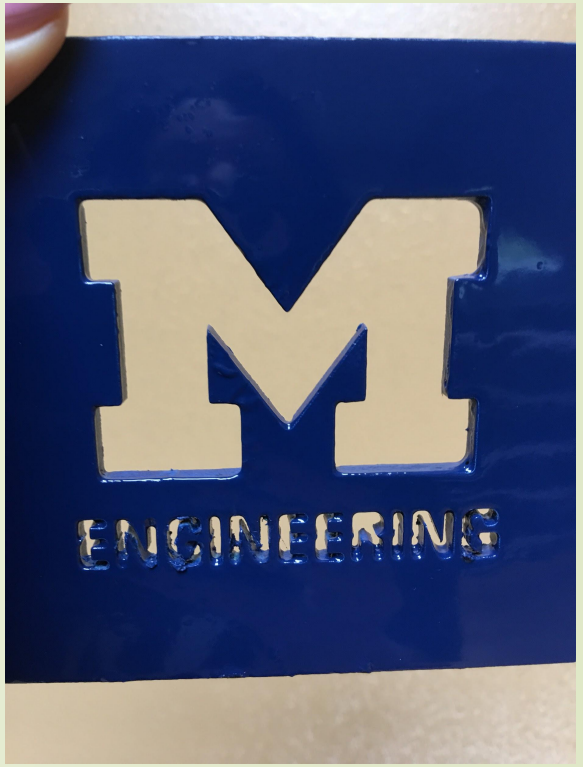




Waterjet Cutting

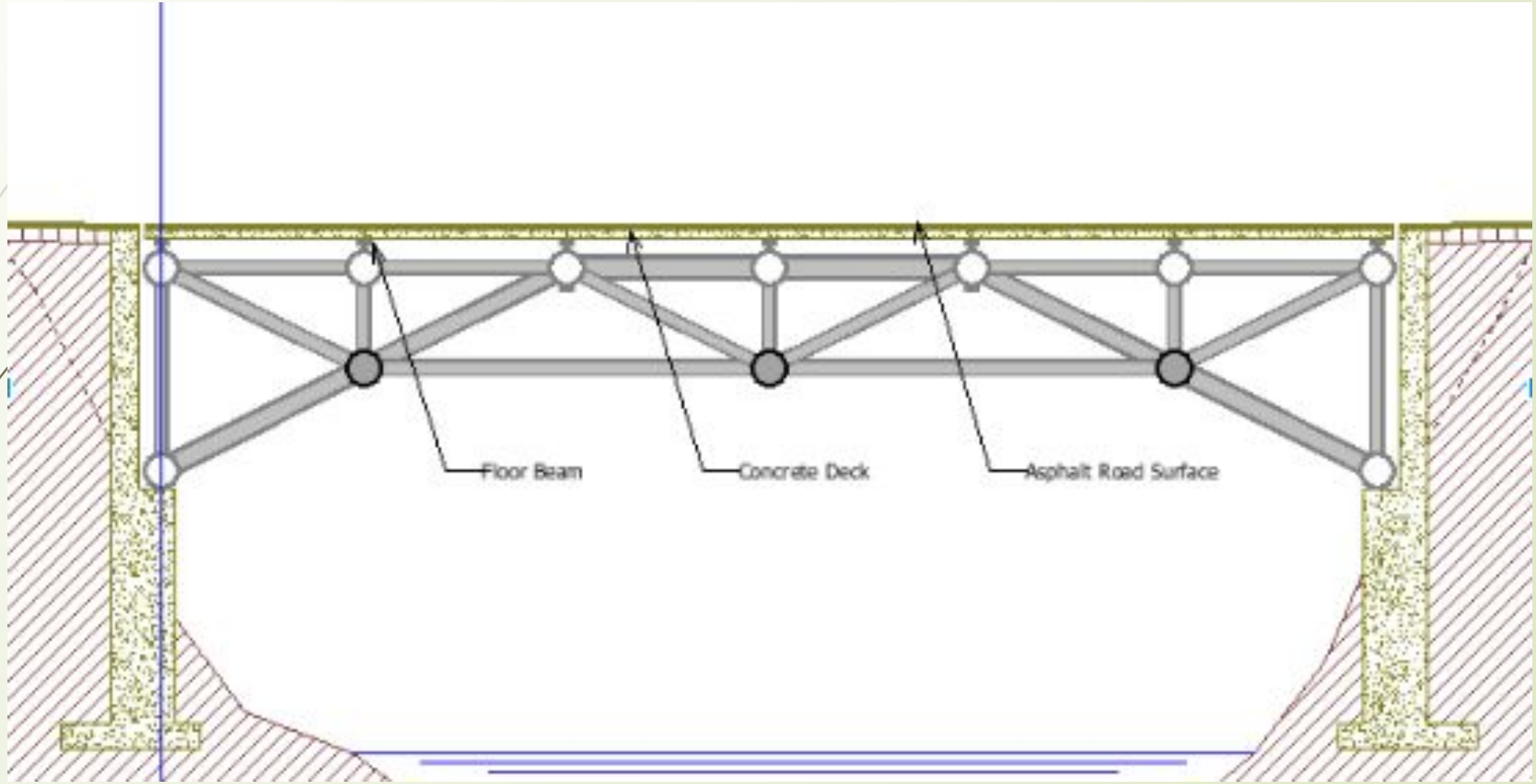




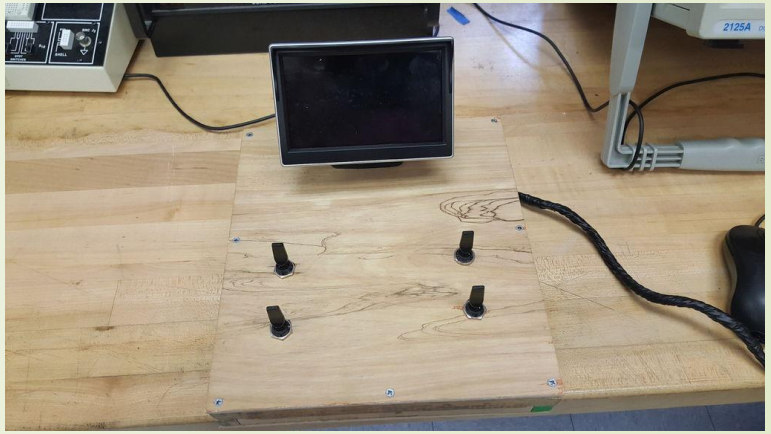


Projects

West Point Bridge Design Competition



Mechatronics Research



HeadsUp Tech