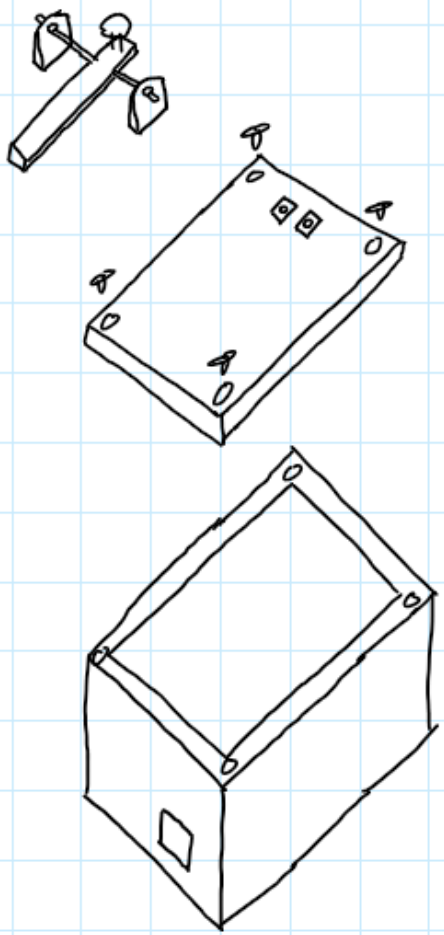
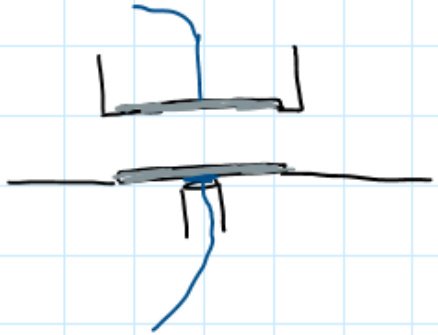
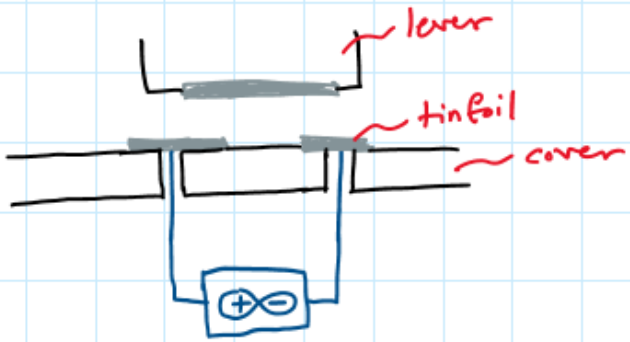
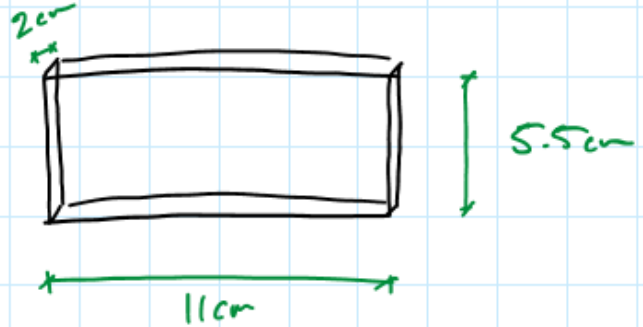
Sketches







Base



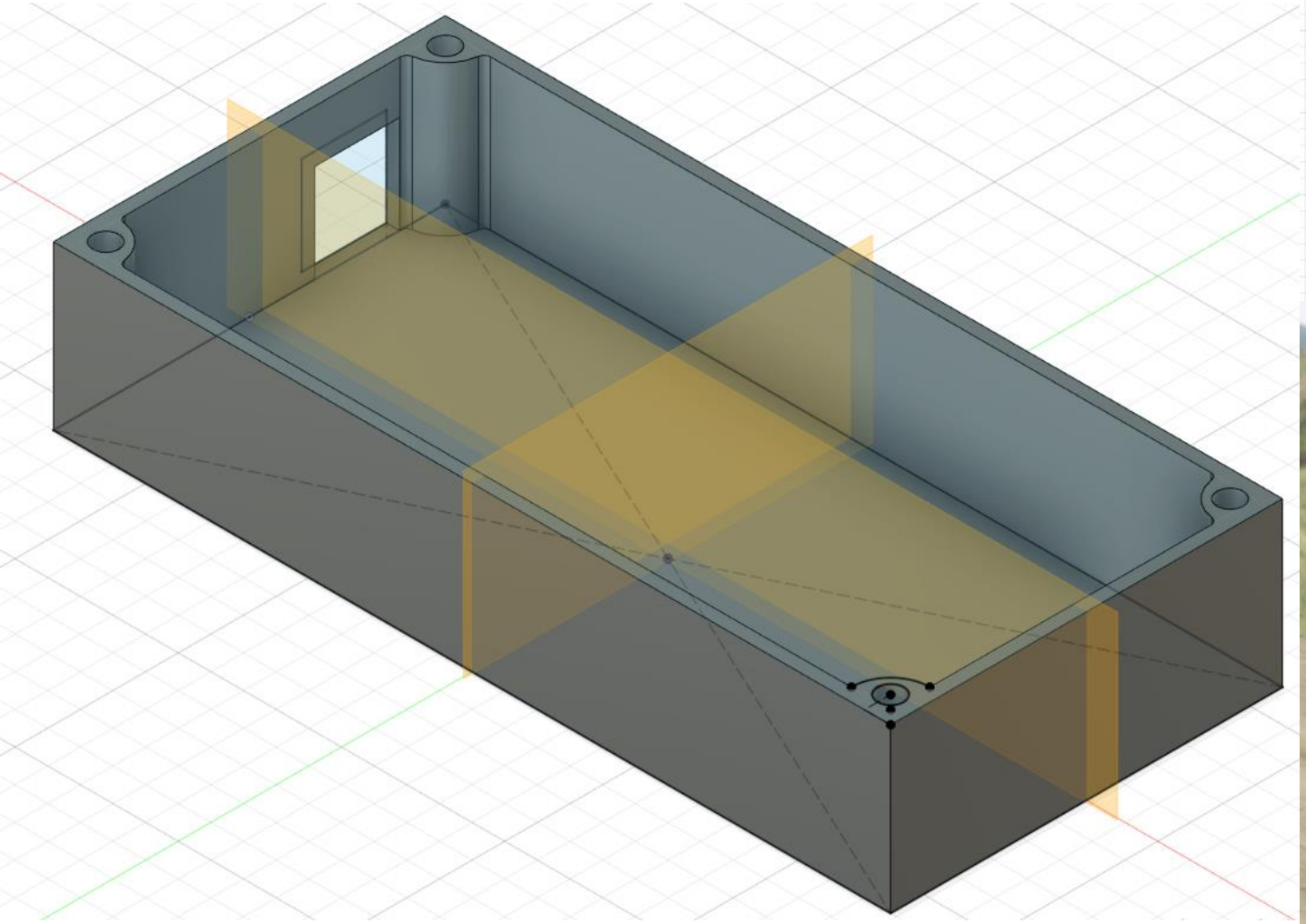
Assume shrinkage = 2.5%

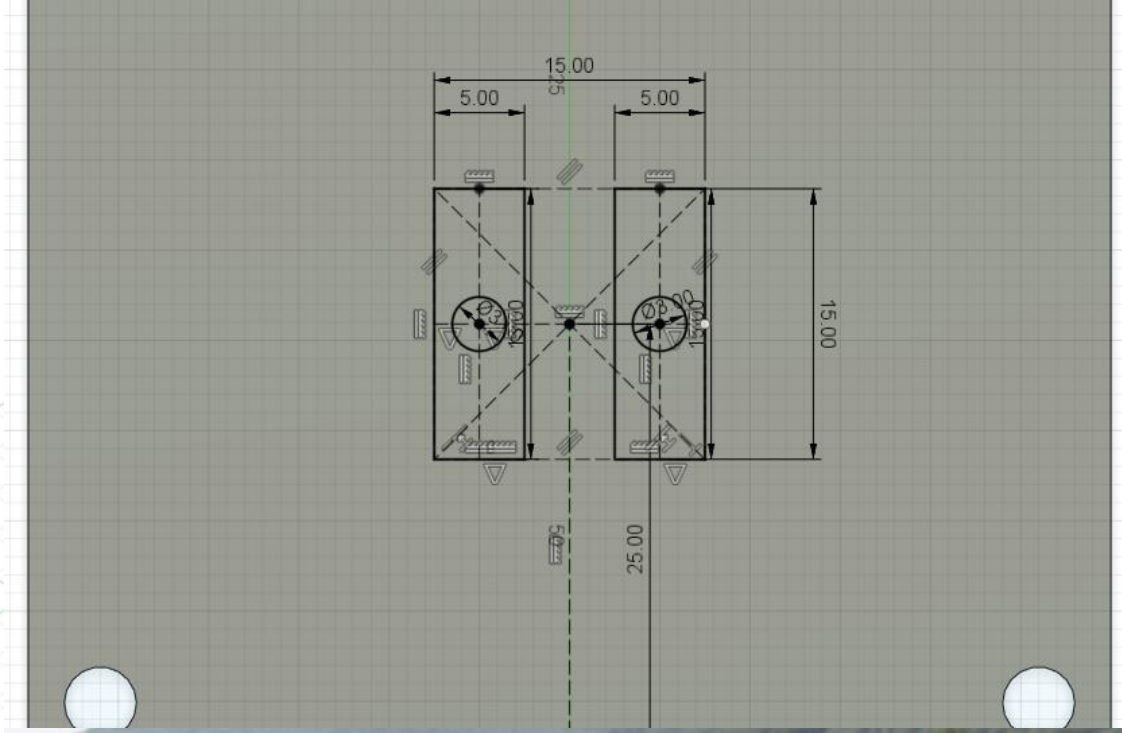
$x(1-\frac{2.5}{100}) = 2 \Rightarrow x = 2.05$

$y(1-\frac{2.5}{100}) = 11 \Rightarrow y = 11.28$

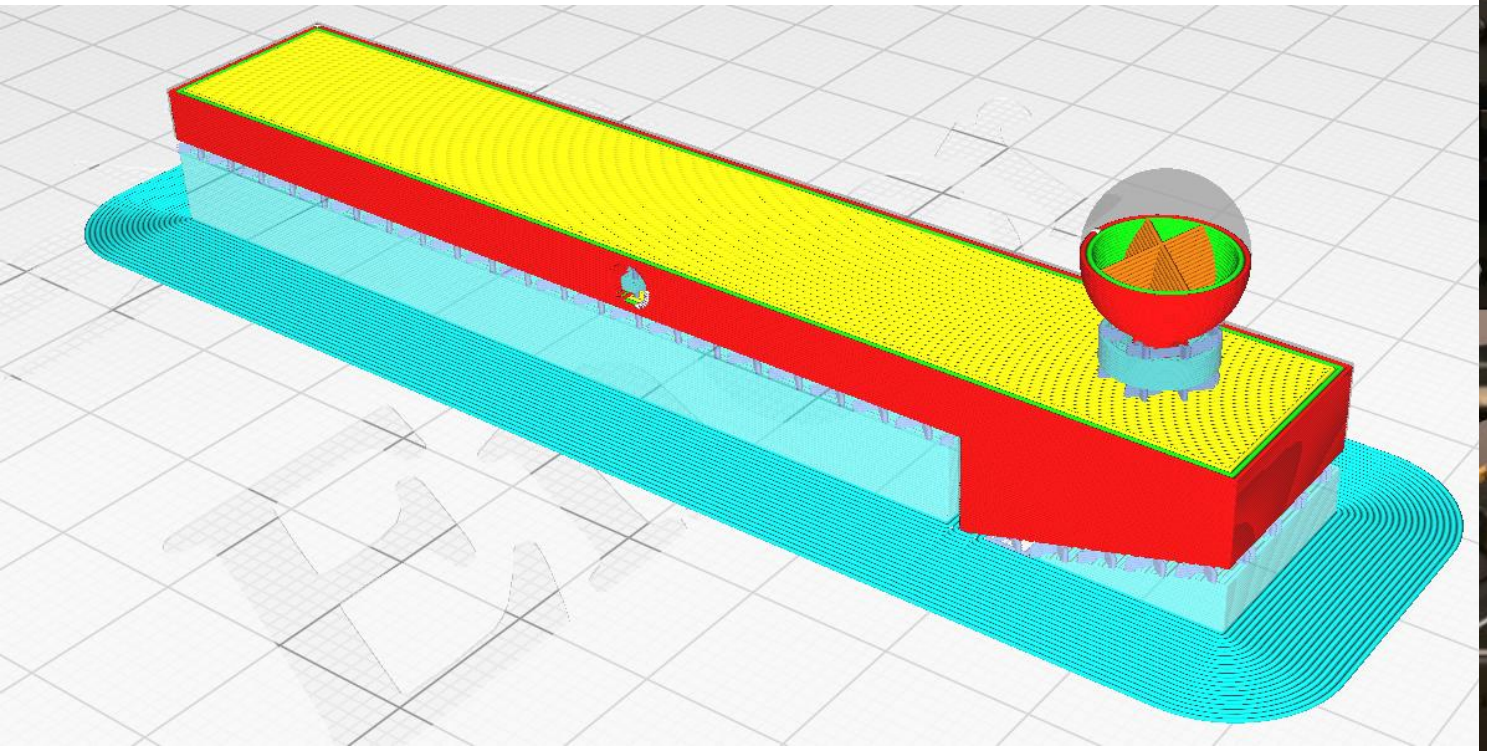
$z(1-\frac{2.5}{100}) = 5.5 \Rightarrow z = 5.64$

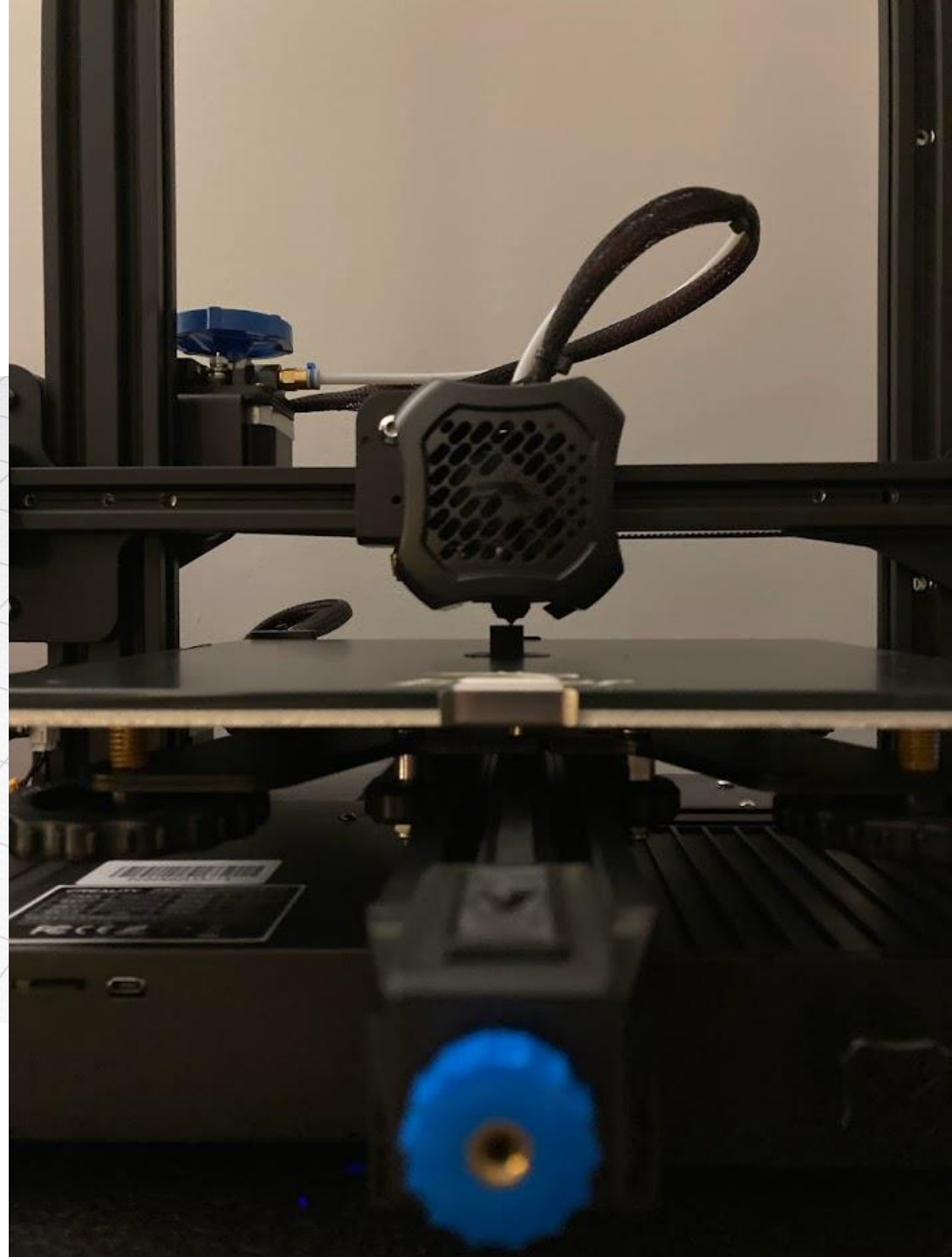
Drawings





3D Printing





Programming

```python
import serial
import keyboard
from datetime import datetime

# Connect to Arduino
port = "COM3"
baud = 9600
arduino_serial = serial.Serial(port, baud)

# Confirmation message
dt = datetime.now().strftime("%Y-%m-%d %H:%M:%S")
print("STARTED READING " + str(port) + " (BAUD=" + st

while True:
    # Read serial and output keypress
    incoming_data = str(arduino_serial.readline())
    keyboard.write(incoming_data[2])
    incoming_data = ""

```

```
    // Print character
    if (release_time >= read_time) {
      release_time = 0;
      keyPress();
      pattern = "";
    }
    release_time++;
  }

  // Button currently pressed
  else if (state == 1) {
    if (release_time != 0) {
       Serial.print("RELEASED: ");
       Serial.println(release_time);
      release_time = 0;
    }
    press_time++;
  }

   Serial.println(pattern);
}

void keyPress() {
  int i = 0;

  // Loop through all defined (https://fc
  for (i=0; i<sizeof patterns/sizeof patt
    String candidate = patterns[i];
    if (pattern == candidate) {
      break;
    }
  }

  if (i != sizeof patterns/sizeof patterr
    Serial.println(letters[i]);
  }
}
```

Assembly

Result