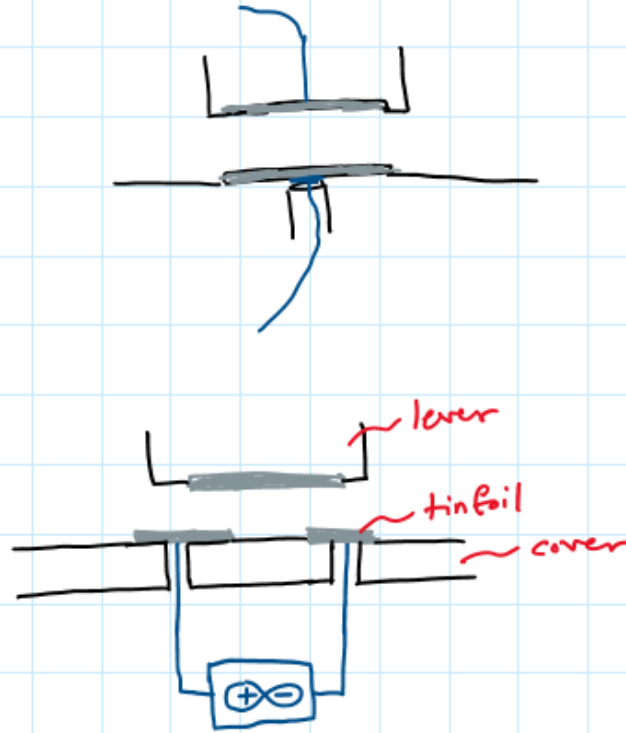
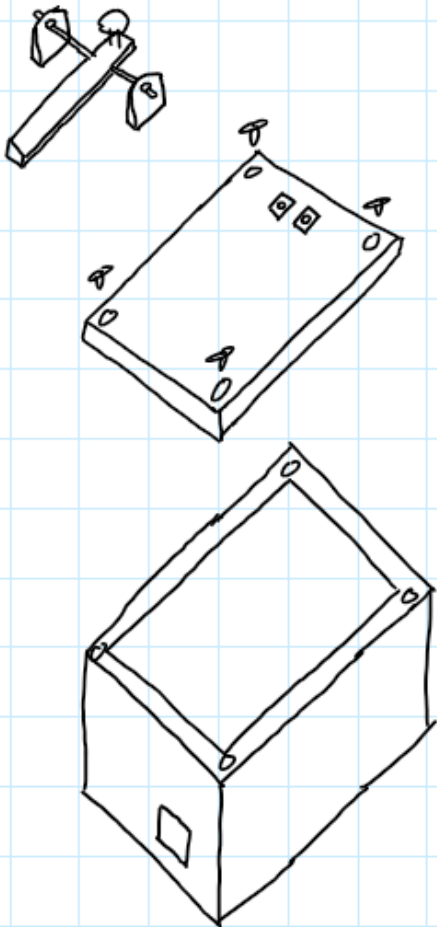
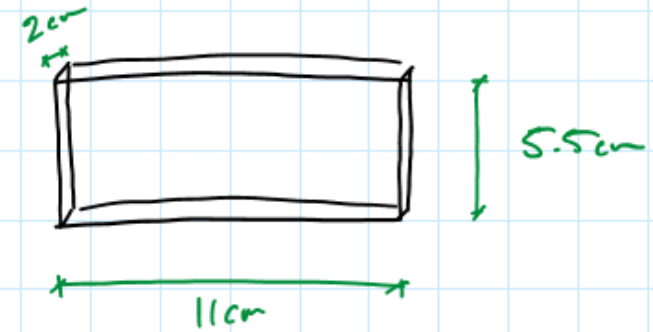


Sketches



Base



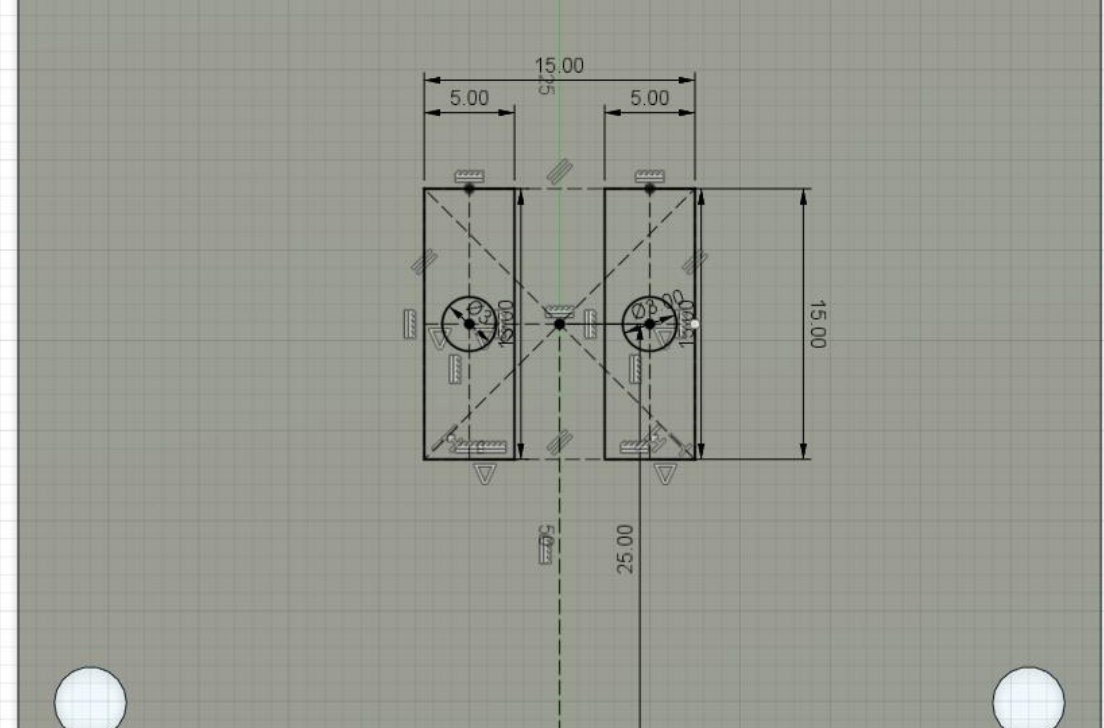
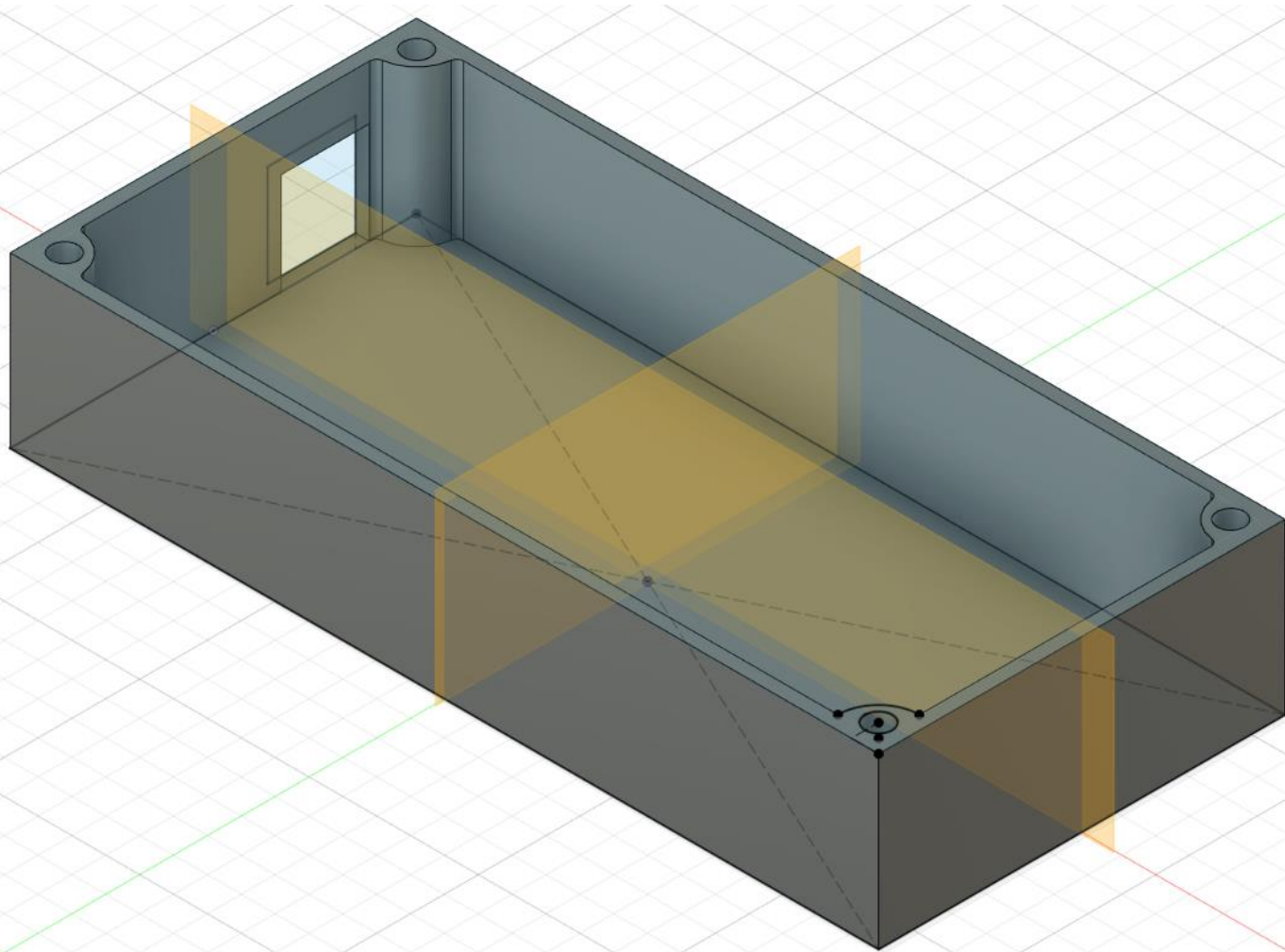
Assume shrinkage = 2.5%.

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

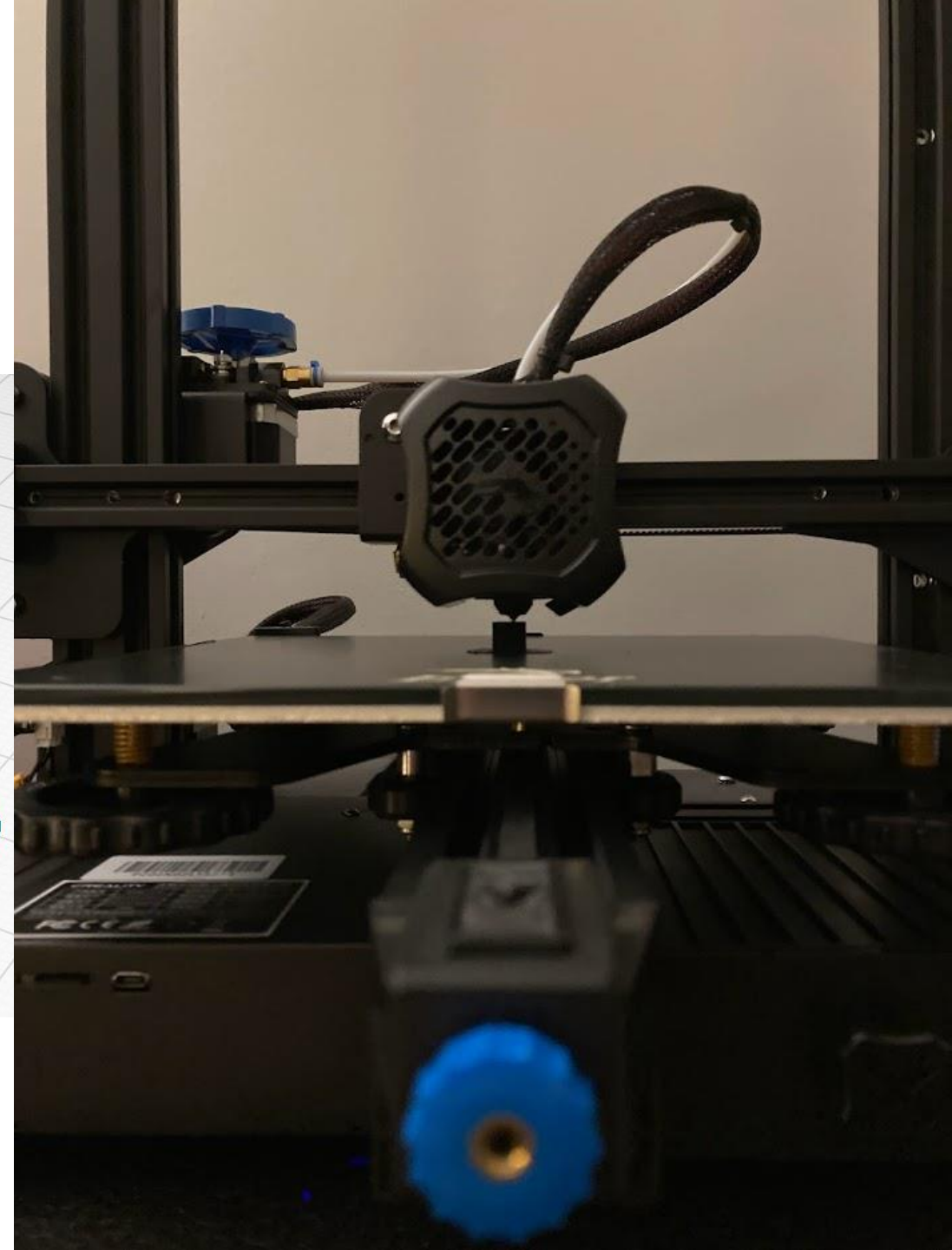
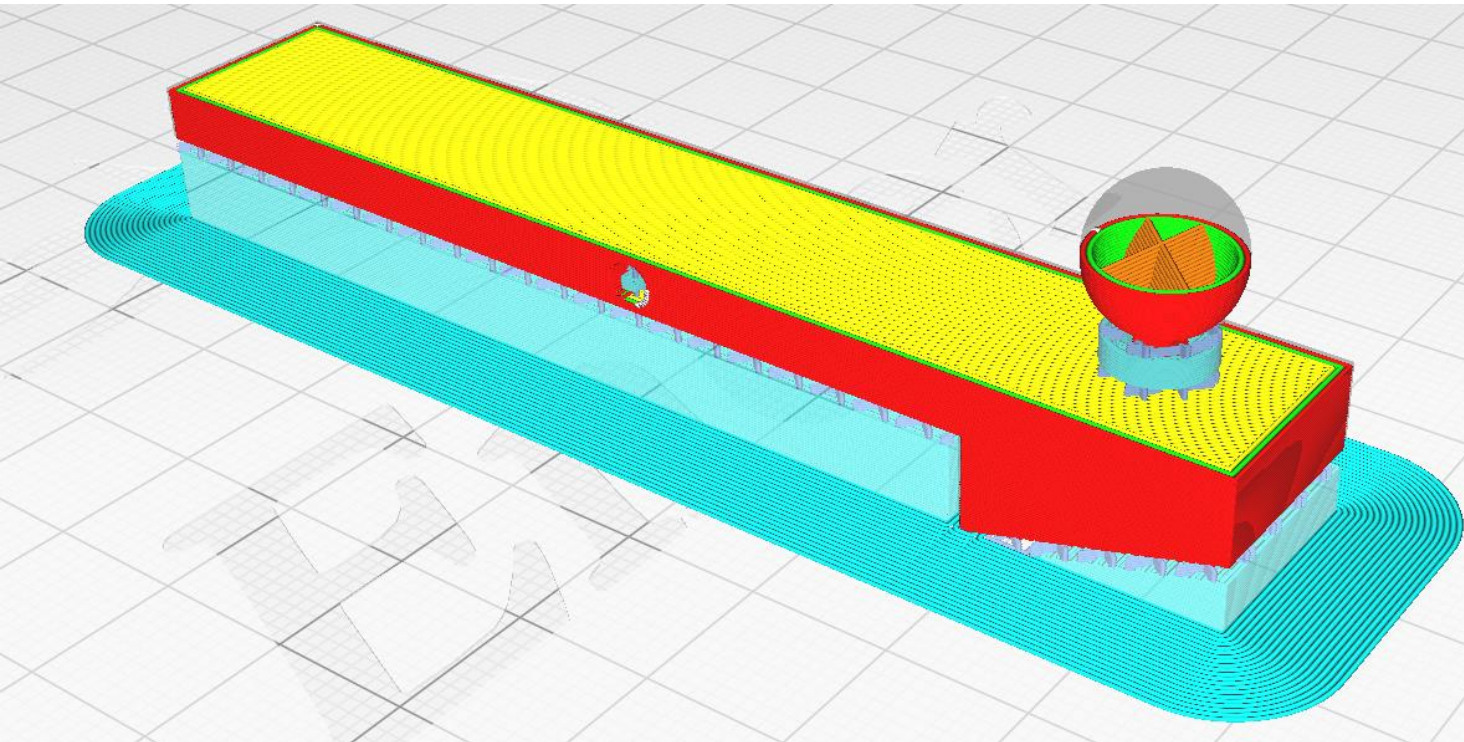
$$y(1 - \frac{2.5}{100}) = 11 \Rightarrow y = 11.28$$

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

Drawings



3D Printing



Programming

```
4 import serial
5 import keyboard
6 from datetime import datetime
7
8 # Connect to Arduino
9 port = "COM3"
10 baud = 9600
11 arduino_serial = serial.Serial(port, baud)
12
13 # Confirmation message
14 dt = datetime.now().strftime("%Y-%m-%d %H:%M:%S")
15 print("STARTED READING " + str(port) + " (BAUD=" + str(baud) + ")")
16
17 while True:
18     # Read serial and output keypress
19     incoming_data = str(arduino_serial.readline())
20     keyboard.write(incoming_data[2])
21     incoming_data = ""
22
```

```
// 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://en.cppreference.com/w/cpp/string/basic\_string\_view)
    for (i=0; i<sizeof patterns/sizeof pattern; i++) {
        String candidate = patterns[i];
        if (pattern == candidate) {
            break;
        }
    }

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


Assembly



Result

