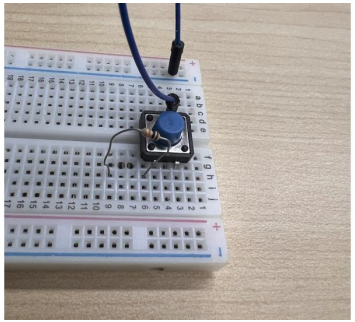
Light Sculpture Project - Whirlwind of Oppσtunity

Team 6

Sensor - Button

- The button sensor responds to a user pressing it
- Because of its simplicity, the system is reliant on coding to produce a more complex function
- For our statue, it will cause the lights to blink in succession after it’s pressed
- The buttons have to remain pressed for the lights to continue blinking

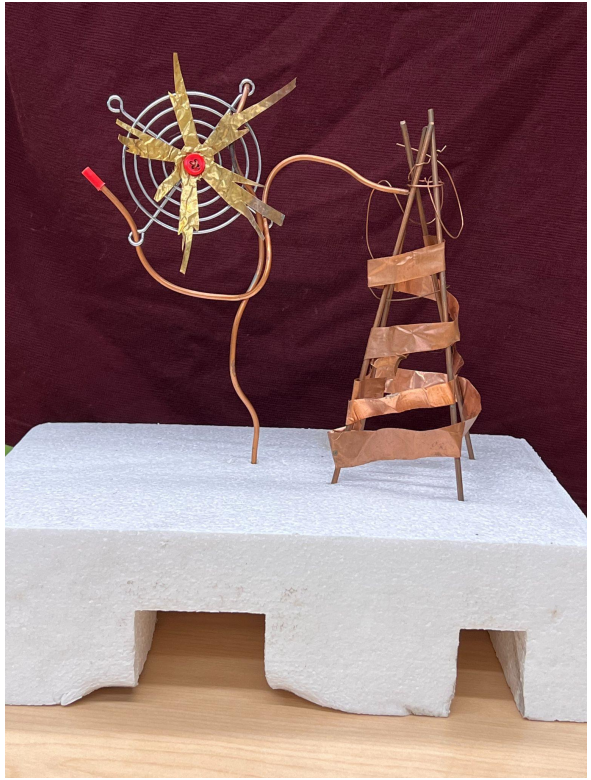


Description

The sculpture is a scale model of the Whirlwind sculpture on PED walkway.

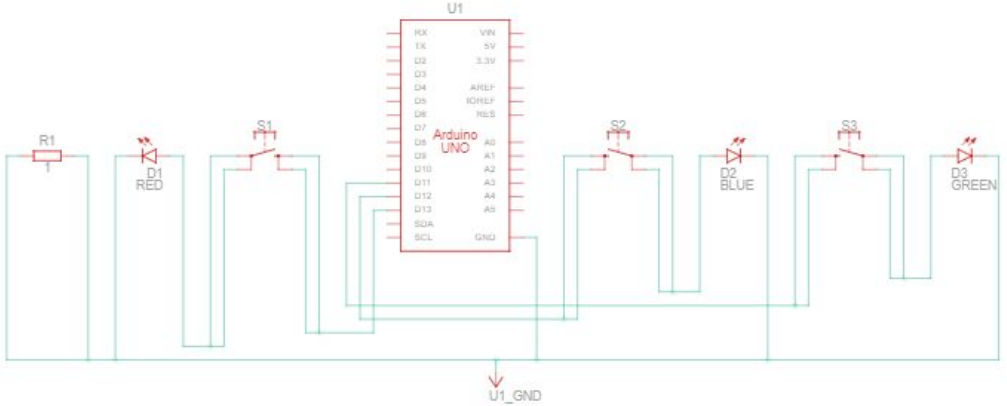
- Copper rods, wire, and foil were used to recreate the steel form of the sculpture.
- A recycled computer fan grill became the backing to the brass star.
- All of this was integrated into a foam base with cutouts allotted for the arduino and breadboard.

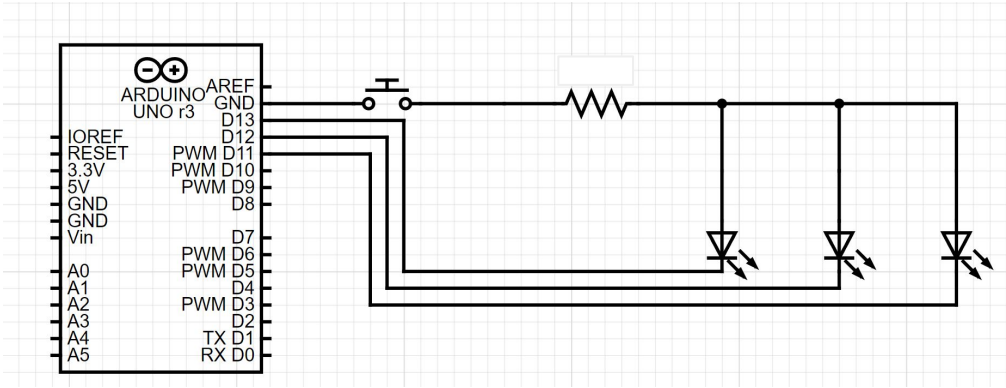
The light sculpture consists of 3 LEDs controlled by the arduino code, prompting it to begin flashing when the button is pressed.



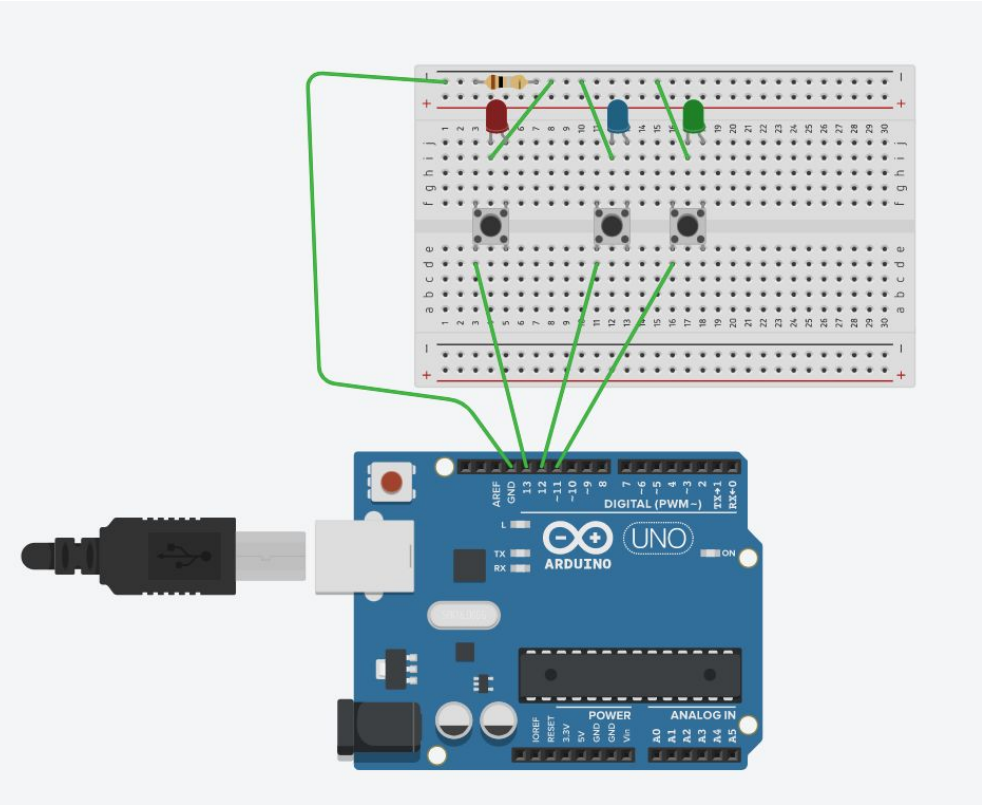
Schematic

Since the system is primarily controlled by the coding operation of the arduino, the circuit itself is rather simple.
It consists of 3 LEDs all connected to their own individual terminals on the arduino.
The LEDs share a common ground and resistor.
The ground signal is interrupted by a button before being connected to the ground terminal.





Arduino Setup



The resistor is placed on the cathode side of the LEDs as to keep the circuit simple and manageable.

It’s a repeatable setup so that infinite more lights and buttons can be added to the circuit.

Code

The first part of the code sets the pins 11, 12, and 13 ready for an output while also specifying which LED will go in which pin.

The second part of the code is a loop that turns each led on and off in a sequence, in the order red -> blue -> green.

Text 1 (Arduino Uno R3)

```
int red = 13;
int blue = 12;
int green = 11;

void setup()
{
  pinMode (red, OUTPUT);
  pinMode (blue, OUTPUT);
  pinMode (green, OUTPUT);
}

void loop()
{
  digitalWrite(red, HIGH);
  delay(300);
  digitalWrite(red, LOW);
  delay(300);
  digitalWrite(blue, HIGH);
  delay(300);
  digitalWrite(blue, LOW);
  delay(300);
  digitalWrite(green, HIGH);
  delay(300);
  digitalWrite(green, LOW);
  delay(300);
}
```