CONTROLING LEDS

BASIC BLINK

BLINK

blink | Arduino 1.8.10

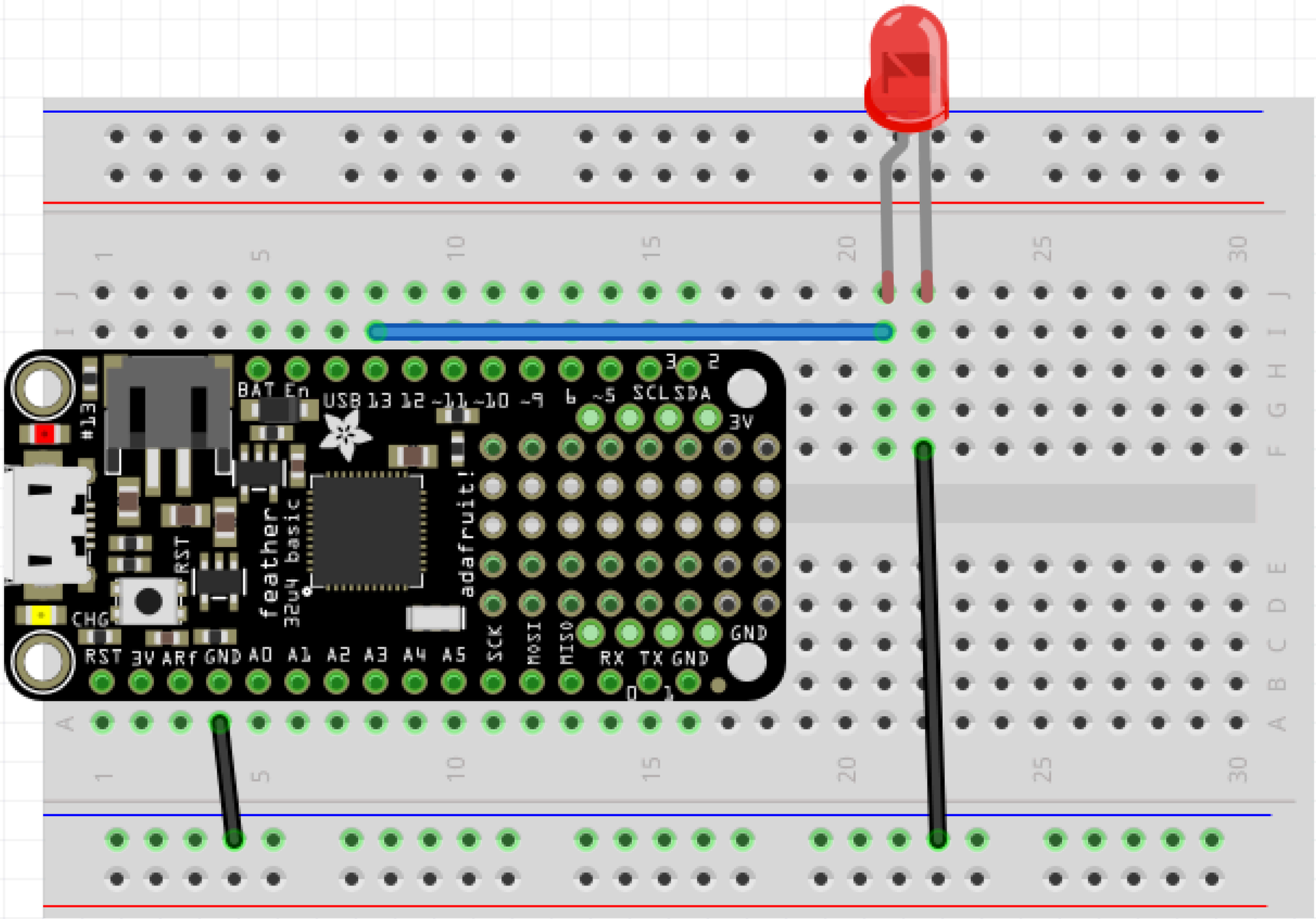
blink

```
1  const int LED_PIN = 13;
2
3  void setup() {
4    pinMode(LED_PIN, OUTPUT);
5  }
6
7  void loop() {
8    digitalWrite(LED_PIN, HIGH);
9    delay(1000);
10
11   digitalWrite(LED_PIN, LOW);
12   delay(1000);
13 }
```

1 Adafruit Feather 32u4 on /dev/cu.usbmodem14101

Try changing the blink frequency, then try creating a pattern.

BLINK 2 (FEATHER)



BLINK 2
(it's the same)

blink | Arduino 1.8.10

blink

```
const int LED_PIN = 13;

void setup() {
  pinMode(LED_PIN, OUTPUT);
}

void loop() {
  digitalWrite(LED_PIN, HIGH);
  delay(1000);

  digitalWrite(LED_PIN, LOW);
  delay(1000);
}
```

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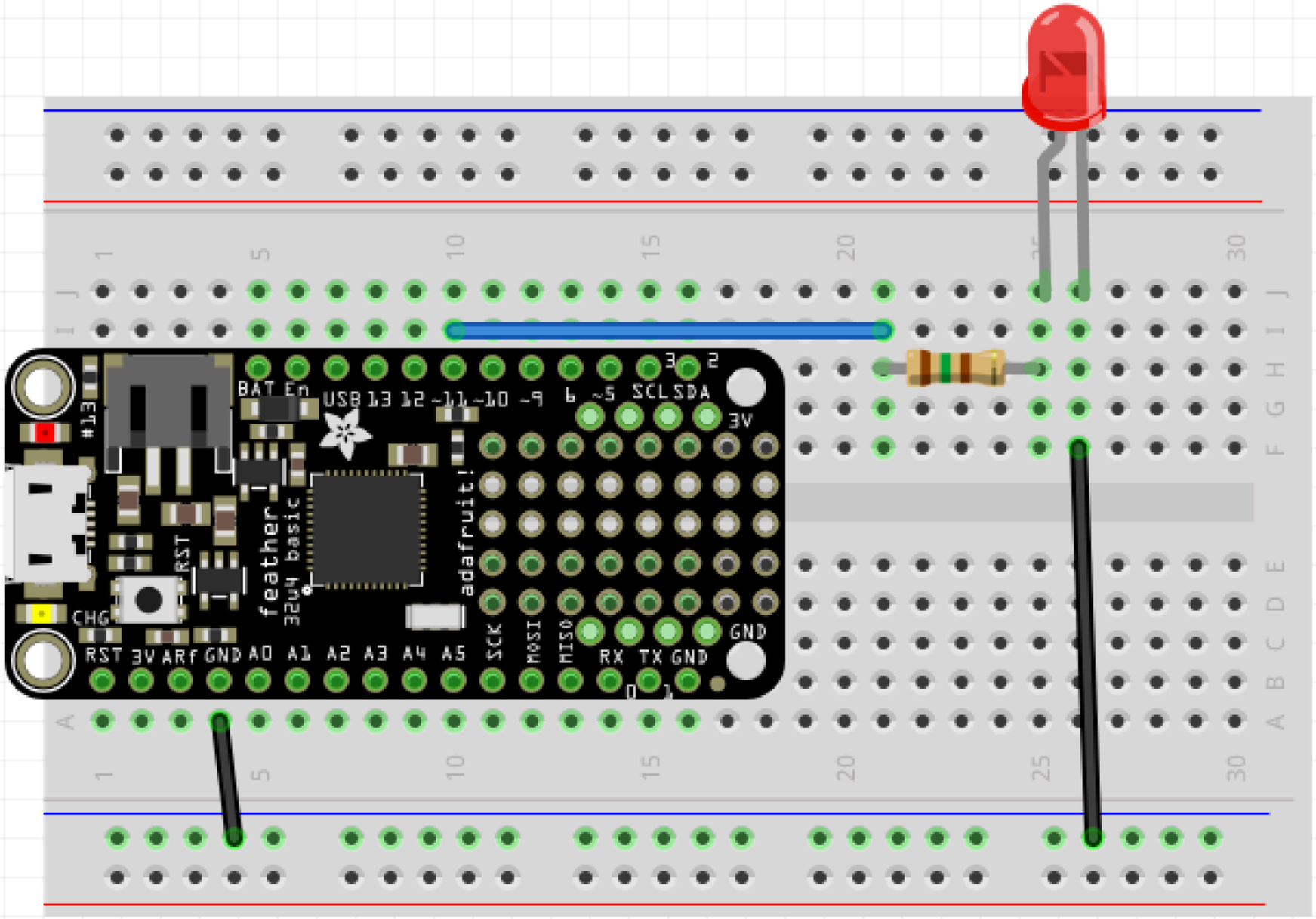
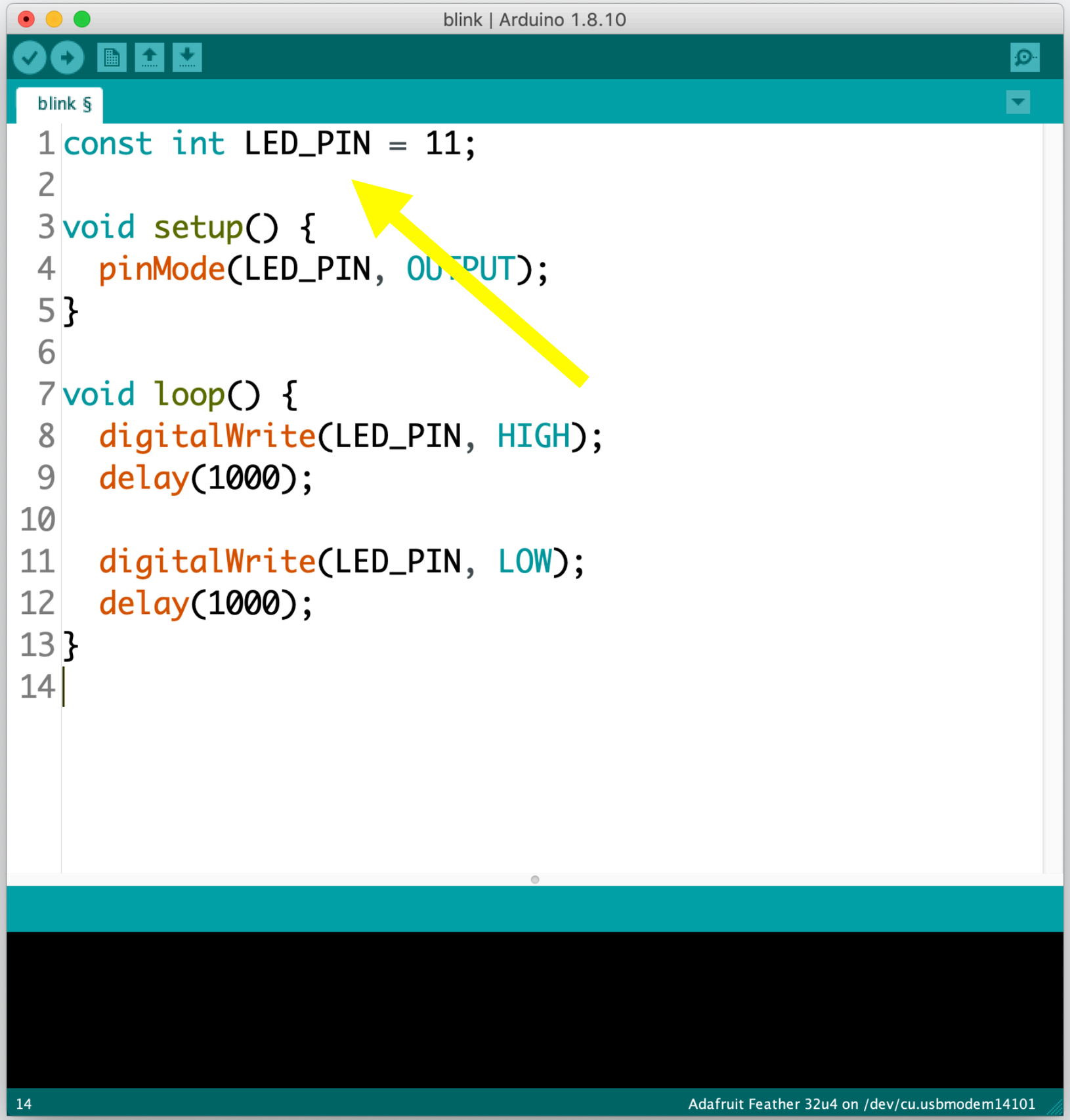
BLINK 3


BAT En
USB 13 12 ~11 ~10 ~9 6 ~5 SCL SDA
3 2
3V
#13
RST
CHG
feather
32u4 basic
adafruit
RST 3V ARf GND A0 A1 A2 A3 A4 A5 SCK MOSI MISO RX TX GND
GND
1 5 10 15 20 25 30
A B C D E F G H I J

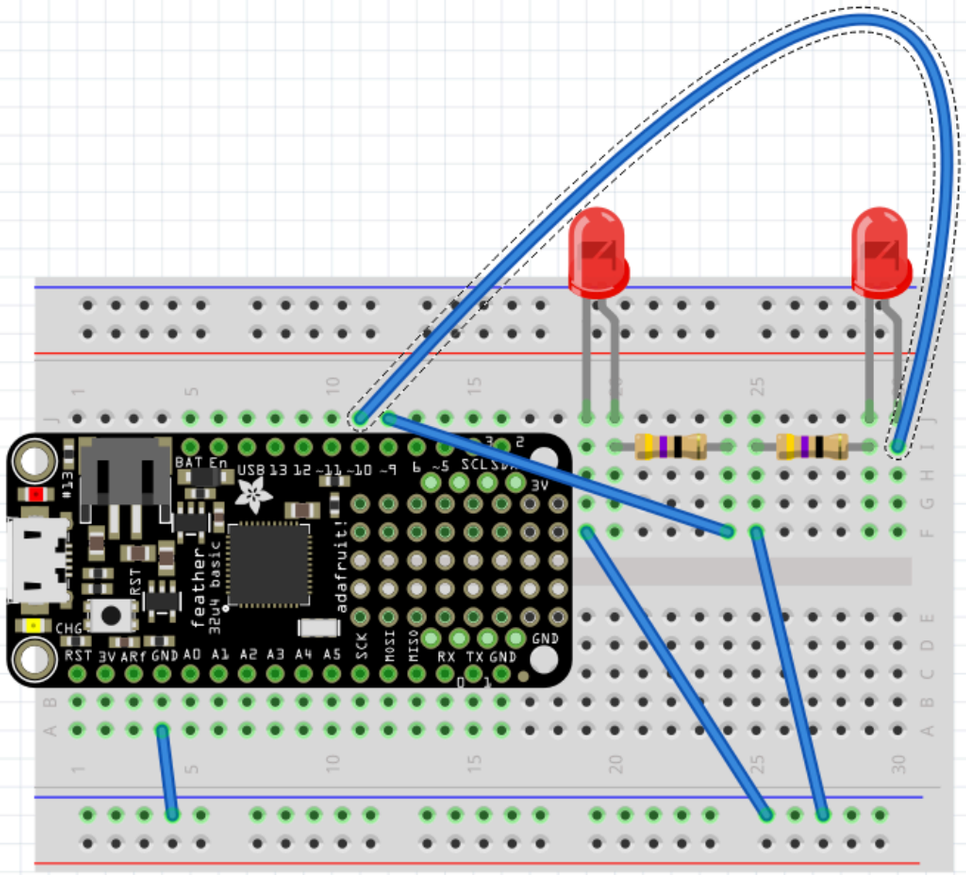
BLINK 3


blink | Arduino 1.8.10
blink §
1 const int LED_PIN = 11;
2
3 void setup() {
4 pinMode(LED_PIN, OUTPUT);
5 }
6
7 void loop() {
8 digitalWrite(LED_PIN, HIGH);
9 delay(1000);
10
11 digitalWrite(LED_PIN, LOW);
12 delay(1000);
13 }
14
14
Adafruit Feather 32u4 on /dev/cu.usbmodem14101

Try connecting more LEDs to other pins. What patterns can you create? What limits/ complications are caused by using the `delay` function?

Untitled Sketch.fzz - Frit

Welcome | Breadboard | Schematic | PCB



fritzing

Add a note | Rotate | Flip | Routing completed

blinkblink | Arduino 1.8.10

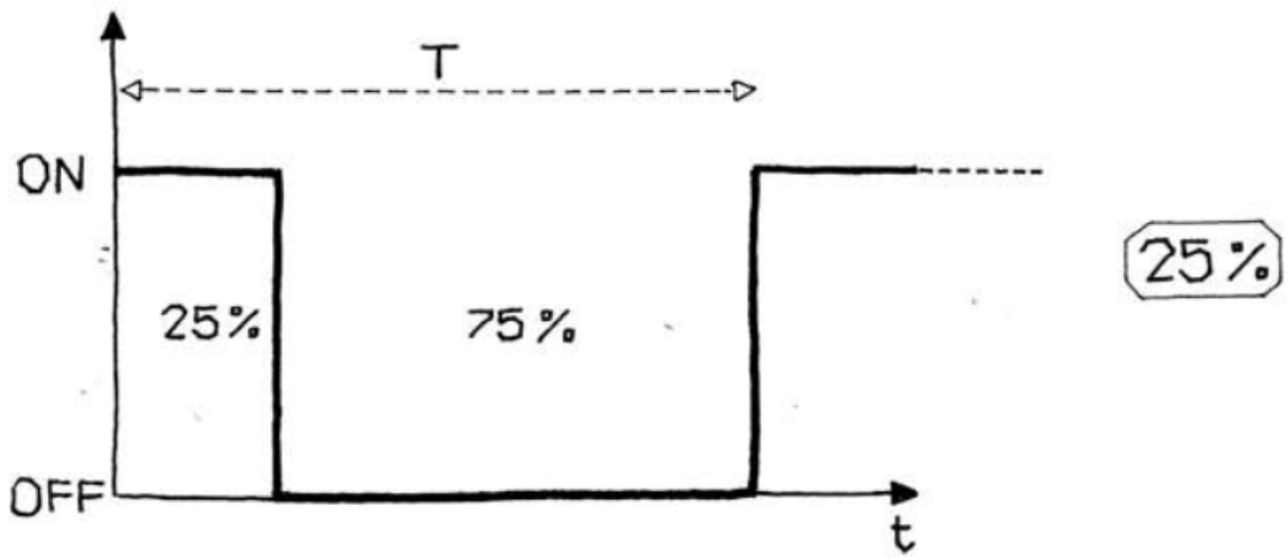
blinkblink

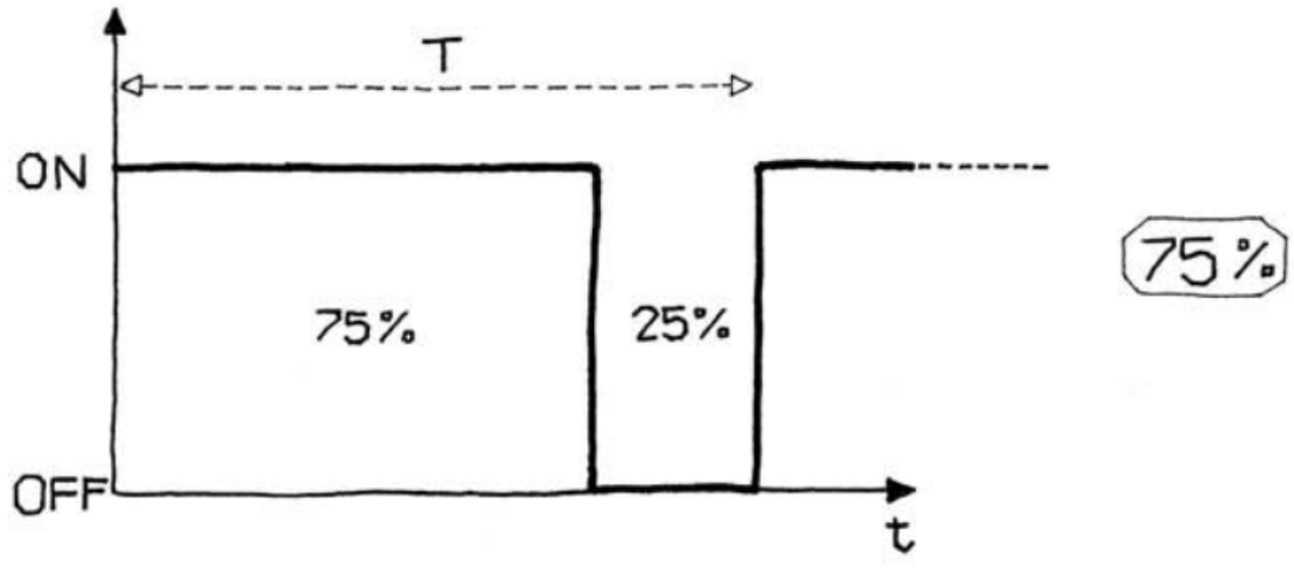
```
1  const int LED_PIN1 = 9;
2  const int LED_PIN2 = 10;
3
4  void setup() {
5    pinMode(LED_PIN1, OUTPUT);
6    pinMode(LED_PIN2, OUTPUT);
7  }
8
9  void loop() {
10   digitalWrite(LED_PIN1, HIGH);
11   delay(500);
12
13   digitalWrite(LED_PIN1, LOW);
14   digitalWrite(LED_PIN2, HIGH);
15   delay(500);
16
17   digitalWrite(LED_PIN1, HIGH);
18   digitalWrite(LED_PIN2, HIGH);
19   delay(500);
20
21   digitalWrite(LED_PIN1, LOW);
22   digitalWrite(LED_PIN2, LOW);
23   delay(500);
24 }
```

Done Saving.

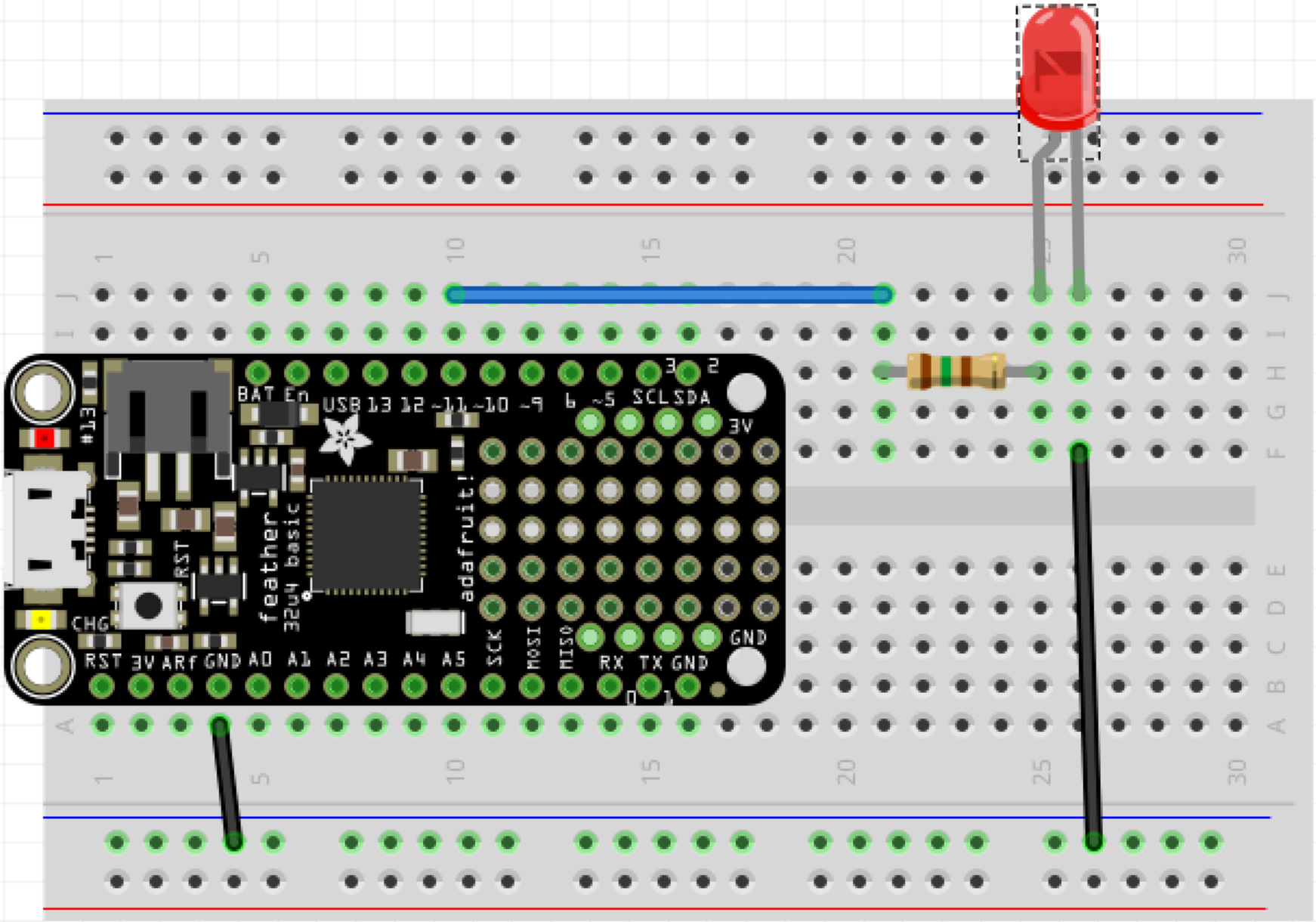
FADE LEDS WITH PULSE WIDTH MODULATION

PULSE WIDTH MODULATION





PWM LED


BAT En USB 13 12 ~11 ~10 ~9 6 ~5 SCL SDA 3V
RST
CHG
feather
32u4 basic
adafruit
RST 3V ARF GND A0 A1 A2 A3 A4 A5 SCK MOSI MISO RX TX GND
GND

PWM LED

fade | Arduino 1.8.10

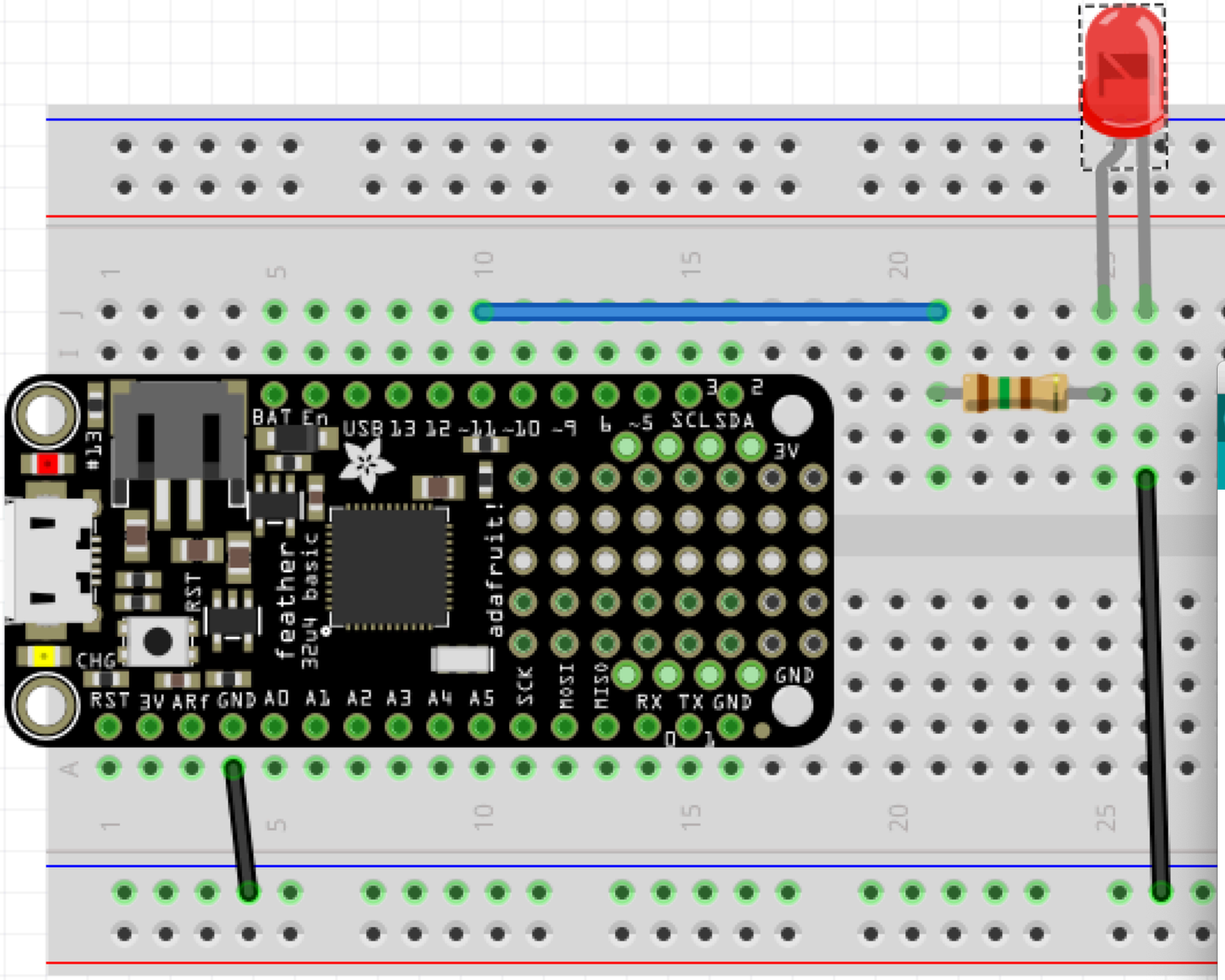
fade

```
const int LED_PIN = 11;

void setup() {
  pinMode(LED_PIN, OUTPUT);
}

void loop() {
  for (int i = 0; i <= 255; i+=5) {
    analogWrite(LED_PIN, i);
    delay(20);
  }

  for (int i = 255; i >= 0; i-=5) {
    analogWrite(LED_PIN, i);
    delay(20);
  }
}
```

Done Saving.

19 Adafruit Feather 32u4 on /dev/cu.usbmodem14101

PWM LED



fade | Arduino 1.8.10

fade

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}
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Done Saving.