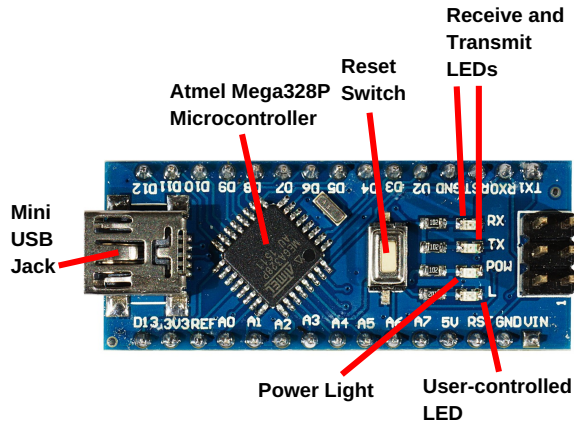
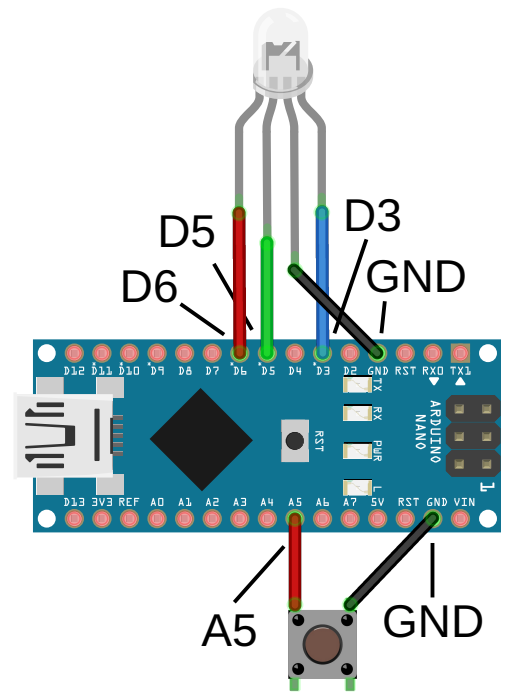


# Science Café: Programming Tiny, Colorful Computers

The Arduino Nano:



Connecting the RGB LED and switch:



## cycleRGB.ino

```
const int rpin = 3, gpin = 5, bpin = 6;

void setup() {
  pinMode(rpin, OUTPUT);
  pinMode(gpin, OUTPUT);
  pinMode(bpin, OUTPUT);
}

void rgb(int r, int g, int b) {
  analogWrite(rpin, r);
  analogWrite(gpin, g);
  analogWrite(bpin, b);
}

void loop() {
  rgb(10, 0, 0);
  delay(500);
  rgb(0, 10, 0);
  delay(500);
  rgb(0, 0, 10);
  delay(500);
  rgb(10, 10, 10);
  delay(500);
}
```

## switchRGB.ino

```
const int rpin = 3, gpin = 5, bpin = 6;
const int spin = 19;

void setup() {
  pinMode(rpin, OUTPUT);
  pinMode(gpin, OUTPUT);
  pinMode(bpin, OUTPUT);
  pinMode(spin, INPUT_PULLUP);
}

void rgb(int r, int g, int b) {
  analogWrite(rpin, r);
  analogWrite(gpin, g);
  analogWrite(bpin, b);
}

void wait() {
  while (digitalRead(spin) == LOW);
  while (digitalRead(spin) == HIGH);
}

void loop() {
  rgb(10, 0, 0);
  wait();
  rgb(0, 10, 0);
  wait();
  rgb(0, 0, 10);
  wait();
  rgb(10, 10, 10);
  wait();
}
```

## fadeRGB.ino

```
const int rpin = 3, gpin = 5, bpin = 6;
const int spin = 19;
int red = 10, green = 0, blue = 0;

void setup() {
  pinMode(rpin, OUTPUT);
  pinMode(gpin, OUTPUT);
  pinMode(bpin, OUTPUT);
  pinMode(spin, INPUT_PULLUP);
}

void update(int &color) {
  while (digitalRead(spin) == HIGH);
  while (digitalRead(spin) == LOW) {
    color = (color + 1) % 12;
    analogWrite(rpin, red);
    analogWrite(gpin, green);
    analogWrite(bpin, blue);
    delay(200);
  }
}

void loop() {
  update(red);
  update(green);
  update(blue);
}
```