Fading With Pot

A potentiometer is a simple knob that provides a variable resistance, which you can read into the Arduino board as an analog value. In this example, you'll connect a poterntiometer to one of the Arduino's analog inputs to control the rate at which the built-in LED on pin 13 blinks.

HARDWARE REQUIRED

Arduino Board
1 10K Potentiometer
1 LED
1 220Ω Resistor

CIRCUIT

Connect three wires to the Arduino board. The first goes to ground from one of the outer pins of the potentiometer. The second goes from 5 volts to the other outer pin of the potentiometer. The third goes from analog input 0 to the middle pin of the potentiometer. For this example, it is possible to use the Arduino board's built in LED attached to pin 13. To use an additional LED, attach its longer leg (the positive leg, or anode), to digital pin 13, and it's shorter leg (the negative leg, or cathode) to the ground (gnd) pin next to pin 13. Because of the low amount of current coming from digital pin 13, it is not necessary to use a current limiting resistor in this particular case.

SCHEMATIC
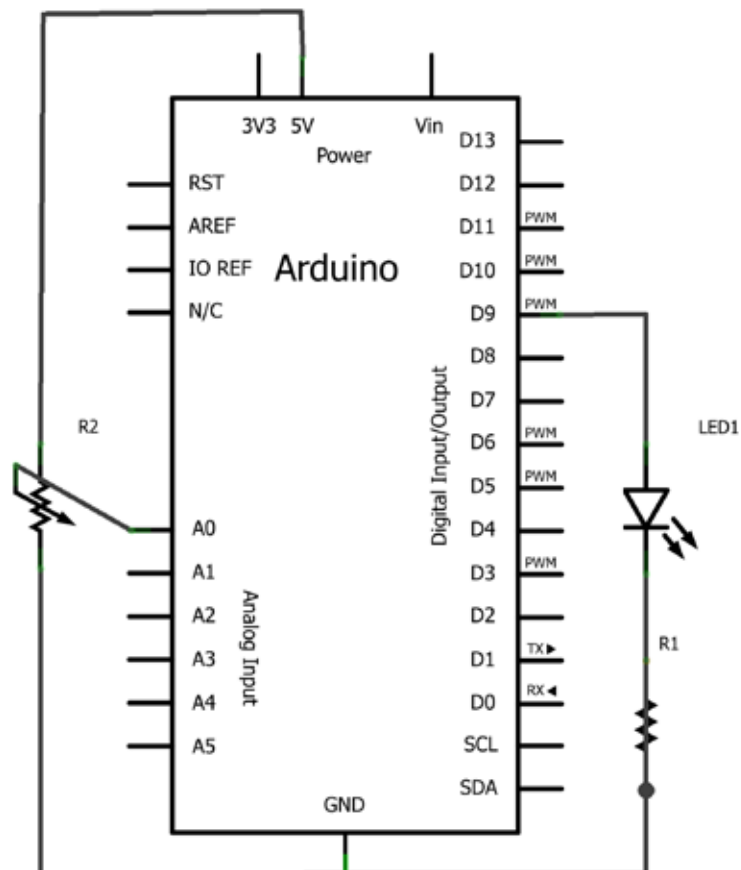
IMAGE
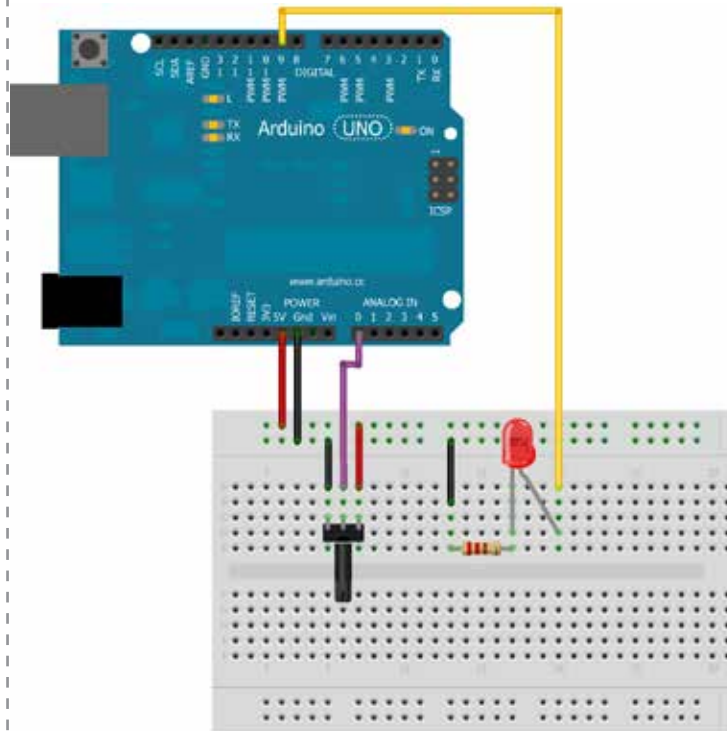
CODE

```
/*
 Fading

 This example shows how to fade an LED using the analogWrite() function.
 The circuit:
 * LED attached from digital pin 9 to ground.

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 http://arduino.cc/en/Tutorial/Fading

 This example code is in the public domain.
 */


int ledPin = 9;    // LED connected to digital pwm pin

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

void loop() {

  // read the Value
  int sensorValue = analogRead(A0);

  // transform the value to 0-255 scale
  sensorValue = map(sensorValue, 0, 1023, 0, 255);

  // apply the value to the LED
  analogWrite(ledPin, sensorValue);

  // add some delay
  delay(10);
  }
```