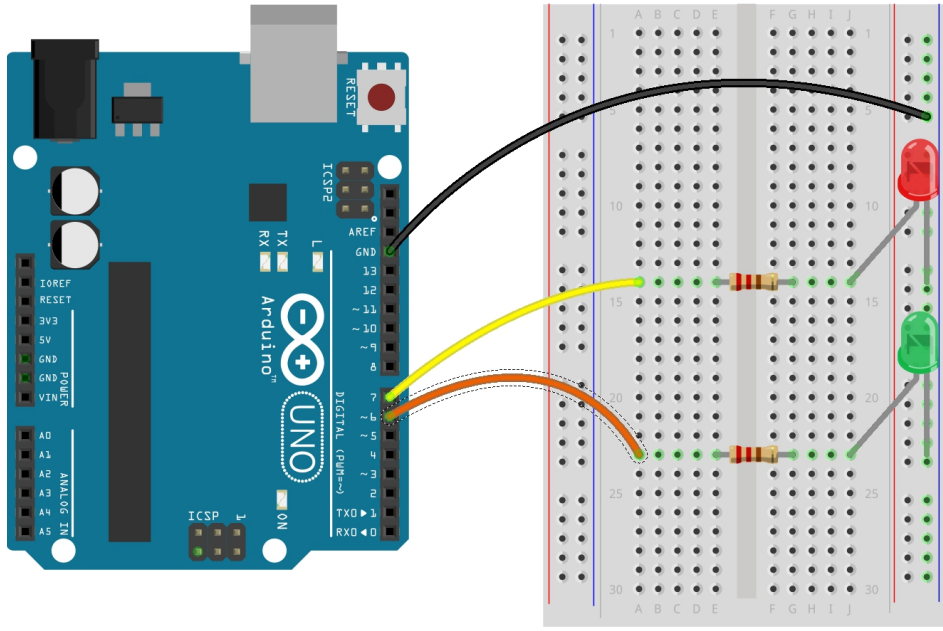
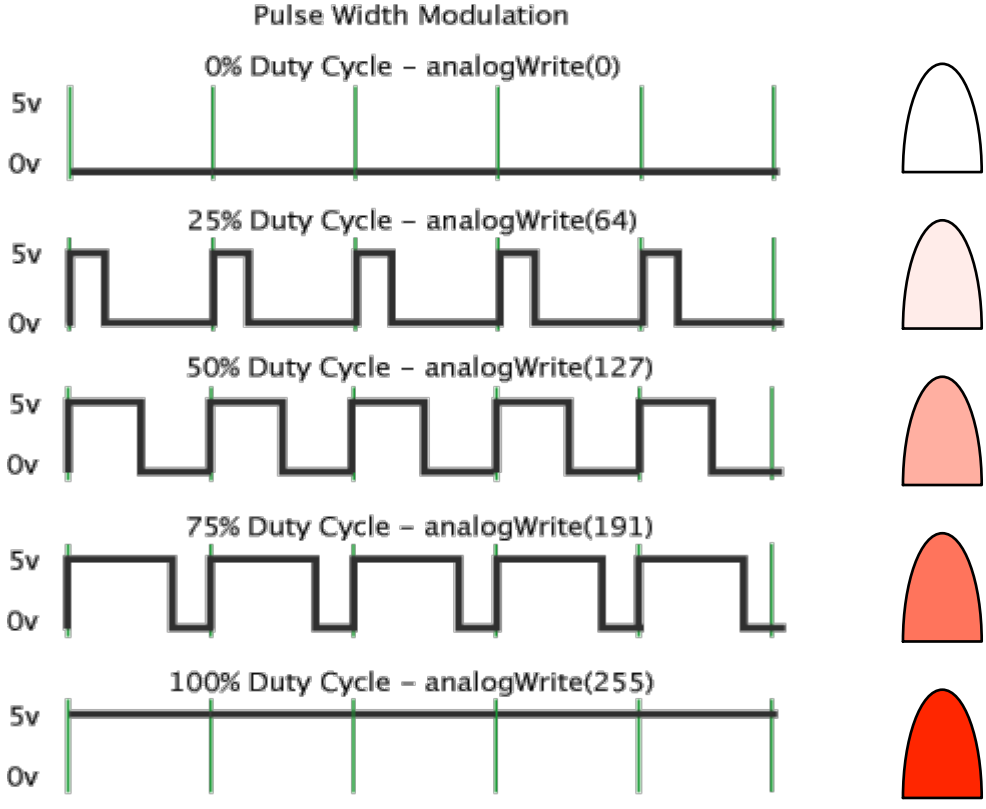
PULSE WIDTH MODULATION



PWM is used to get analog results from a digital output. Digital control is used to create a square wave, a signal that is switched between on and off. This changes the brightness of the LED

Only digital pins 3,5,6,9,10 & 11 can be used with PWM



V 1.0

PULSE WIDTH MODULATION

pwmleds §

```
// PWM

void setup() {
  // initialize digital pins 6 & 7 as outputs.
  pinMode(7, OUTPUT);
  pinMode(6, OUTPUT);
}

void loop() {
  digitalWrite(7, HIGH);

  for (int a=0; a < 256; a++) // runs PWM for this LED
  {
    analogWrite(6, a);
    delay(20);
  }
        // wait for a second
  digitalWrite(7, LOW);
  digitalWrite(6, LOW);// turn the LEDs off by making the voltage LOW
  delay(1000);              // wait for a second
}
```

Here is a loop within the main loop!
It uses a variable called 'a' which is an integer (whole number).

Can you modify the code so that LED 6 fades out once it's at full brightness?

Can you speed up or slow down the fading?

What happens if you try to use PWM with digital pin 7?

How can you make both LEDs fade in and out?