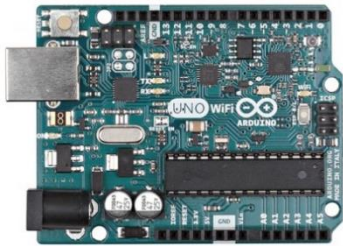


姓名: _____ 班別: F.3 __ () 日期: _____ 分數: _____ / 25

第 1 課: Arduino 基礎教學

學習目標:

1. 了解 Arduino 的運作
2. 了解麵包板
3. 學懂設定 Arduino 的步驟



+

```
Arduino IDE - Blink (Arduino 1.8.5)
File Edit Sketch Tools Help
Blink
Blink
Blink by Dean Parker
Blink the blue LED on the ESP-01 module
This example code is in the public domain

The blue LED on the ESP-01 module is connected to GPIO8
(which is also the TXD pin, so we cannot use Serial.print() at the same time)

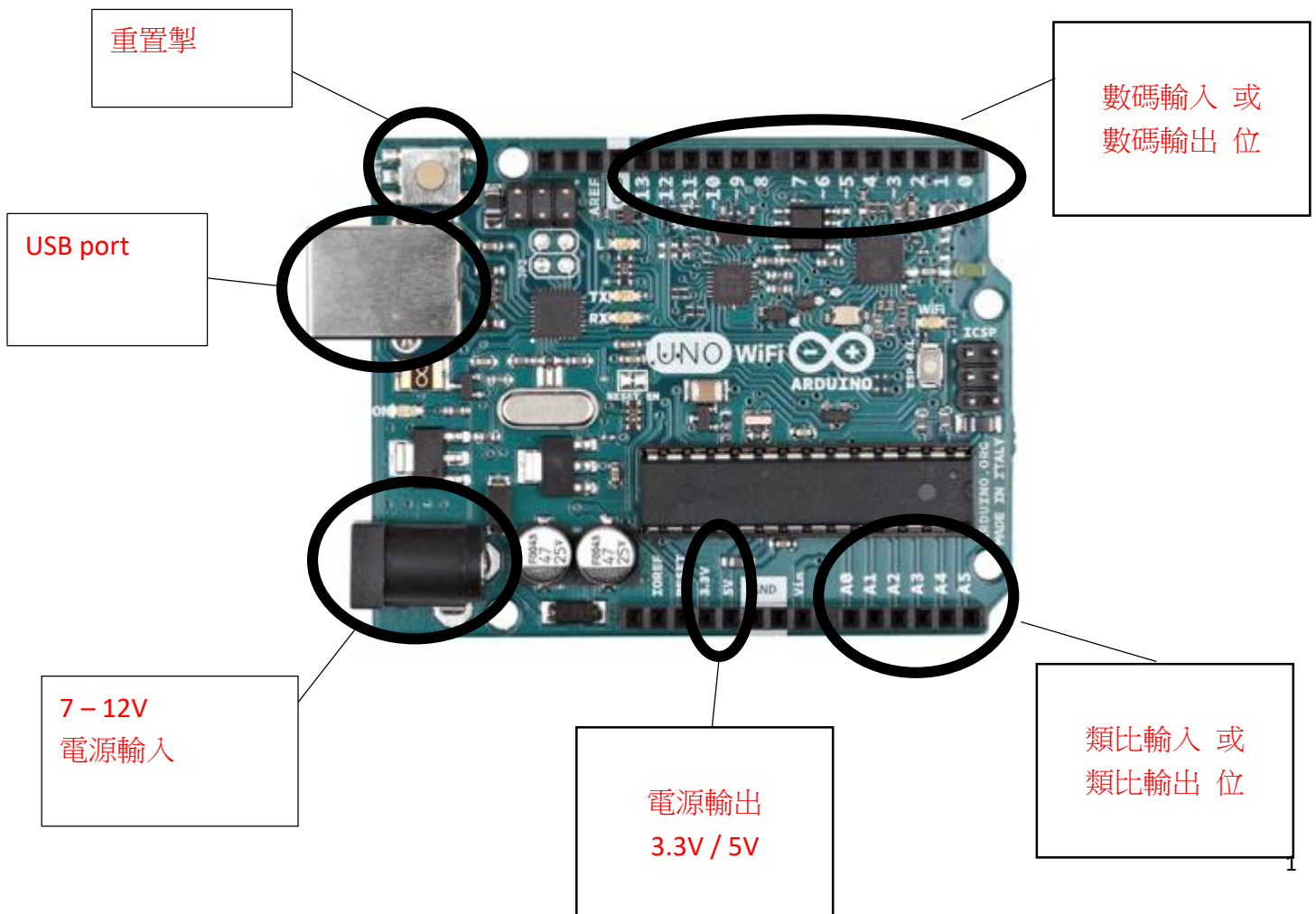
Note that this sketch uses LED_BUILTIN to find the pin with the internal LED
*/

void setup() {
  pinMode(LED_BUILTIN, OUTPUT); // Initialize the LED_BUILTIN pin as an output
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(LED_BUILTIN, LOW); // Turn the LED on (Note that LOW is the voltage level
  // but actually the LED is on; this is because
  // it is active low on the ESP-01)
  delay(1000); // Wait for a second
  digitalWrite(LED_BUILTIN, HIGH); // Turn the LED off by making the voltage HIGH
  delay(1000); // Wait for one second (to demonstrate the active low LED)
}
```

作業 1A: 認識 Arduino 主機板

(6 分)



下載程式至 Arduino 主機板

查證

工具列

程式碼分頁

```
/*
  ESP8266 Blink by Simon Peter
  Blink the blue LED on the ESP-01 module
  This example code is in the public domain

  The blue LED on the ESP-01 module is connected to GPIO1
  (which is also the TXD pin; so we cannot use Serial.print() at the same time)

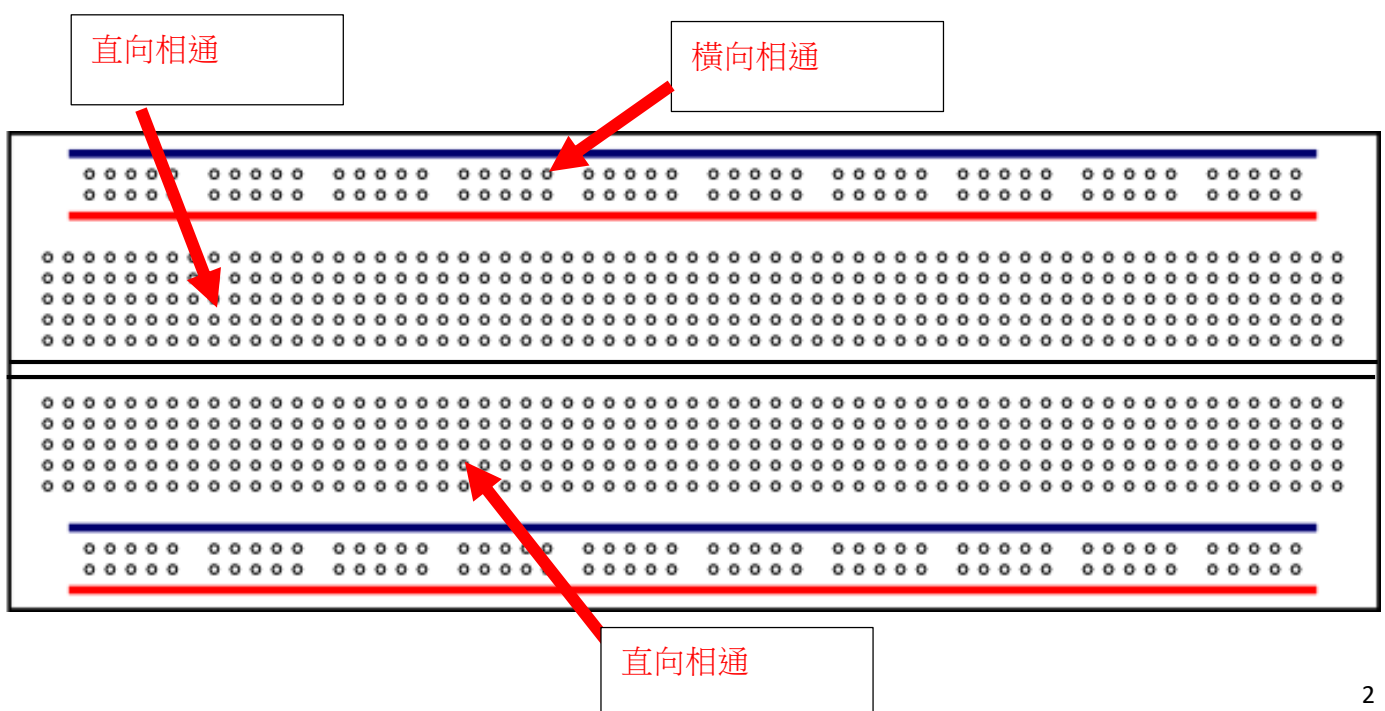
  Note that this sketch uses LED_BUILTIN to find the pin with the internal LED
  */

void setup() {
  pinMode(LED_BUILTIN, OUTPUT); // Initialize the LED_BUILTIN pin as an output
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(LED_BUILTIN, LOW); // Turn the LED on (Note that LOW is the voltage level
  // but actually the LED is on; this is because
  // it is active low on the ESP-01)
  delay(1000); // Wait for a second
  digitalWrite(LED_BUILTIN, HIGH); // Turn the LED off by making the voltage HIGH
  delay(2000); // Wait for two seconds (to demonstrate the active low LED)
}
```

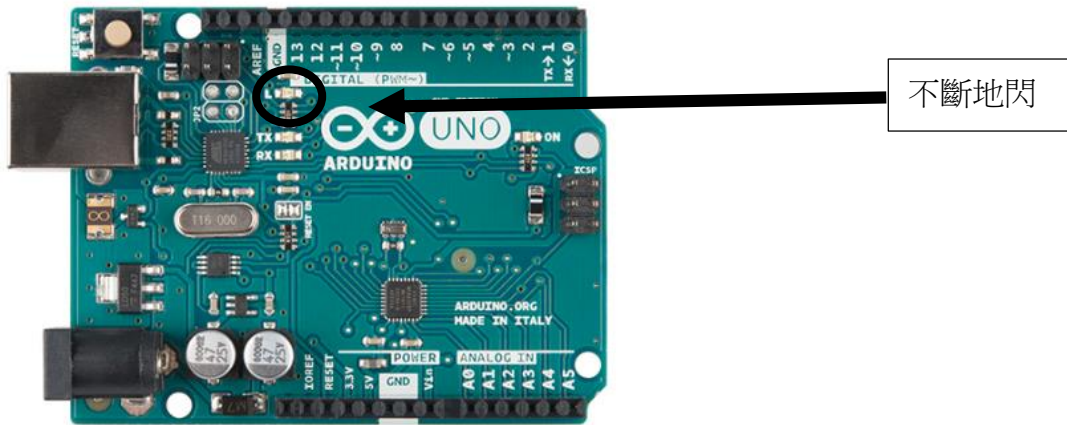
訊息顯示區

作業 2: 認識麵包板

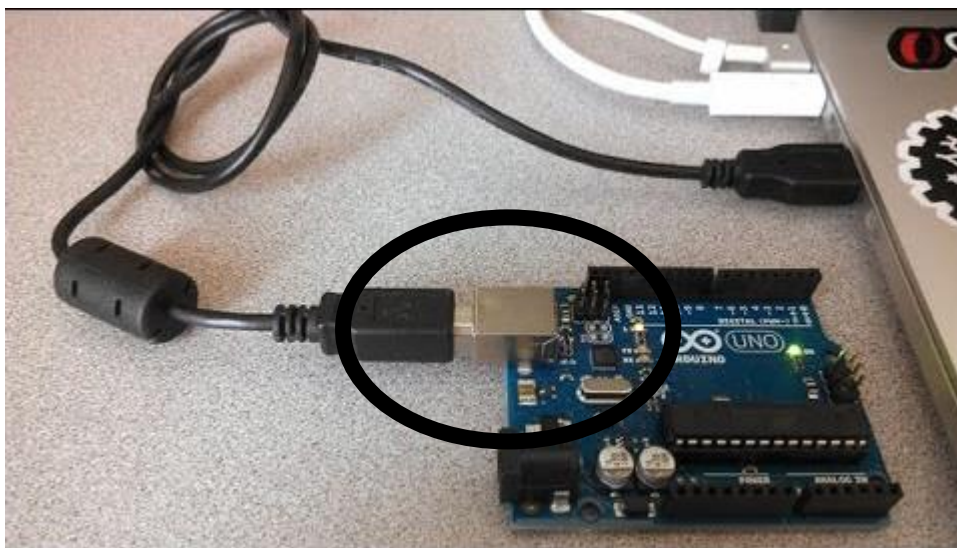


作業 3: 設定 Arduino 的步驟

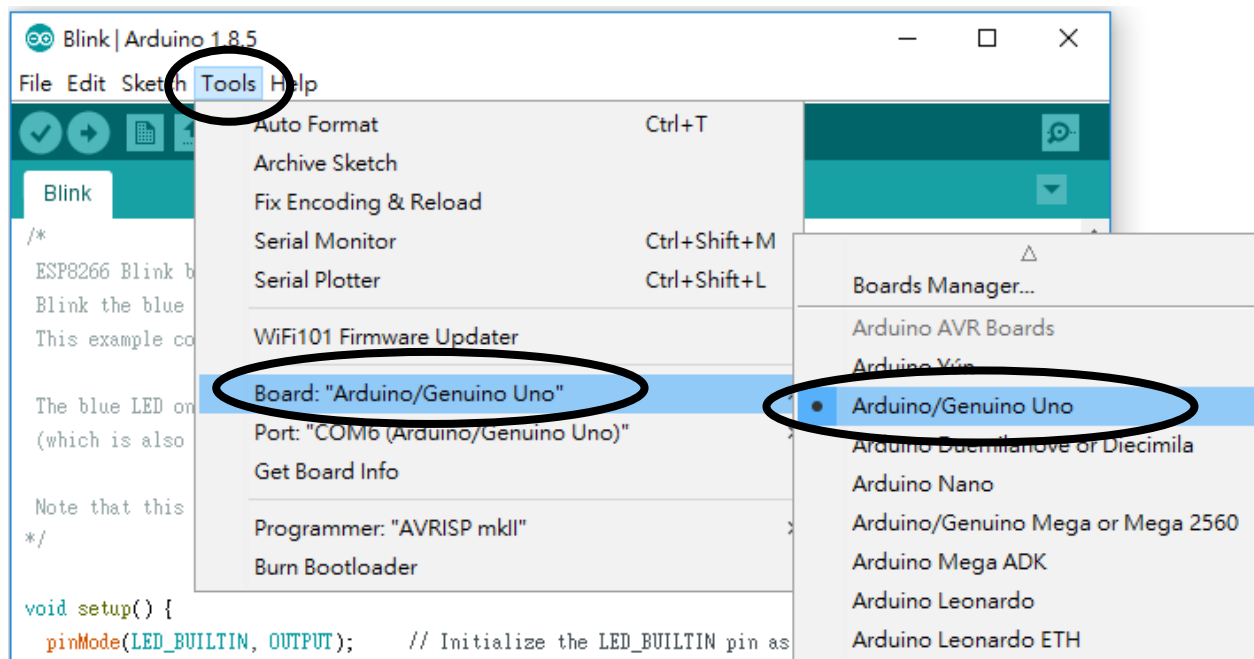
目的: 把 Arduino 上的燈不斷地閃



1. 把 USB 線連接至 Arduino (如下圖)

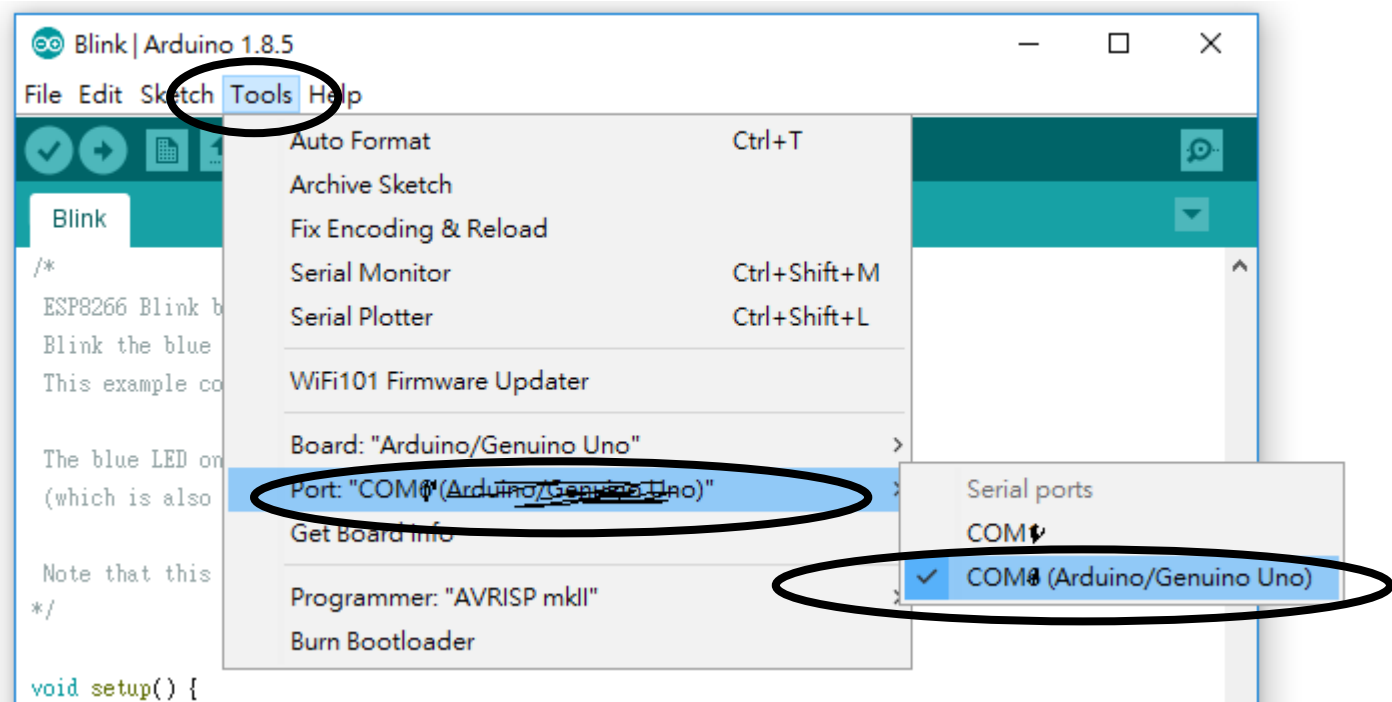


2a. 設定 Arduino IDE 為以下設定 1:

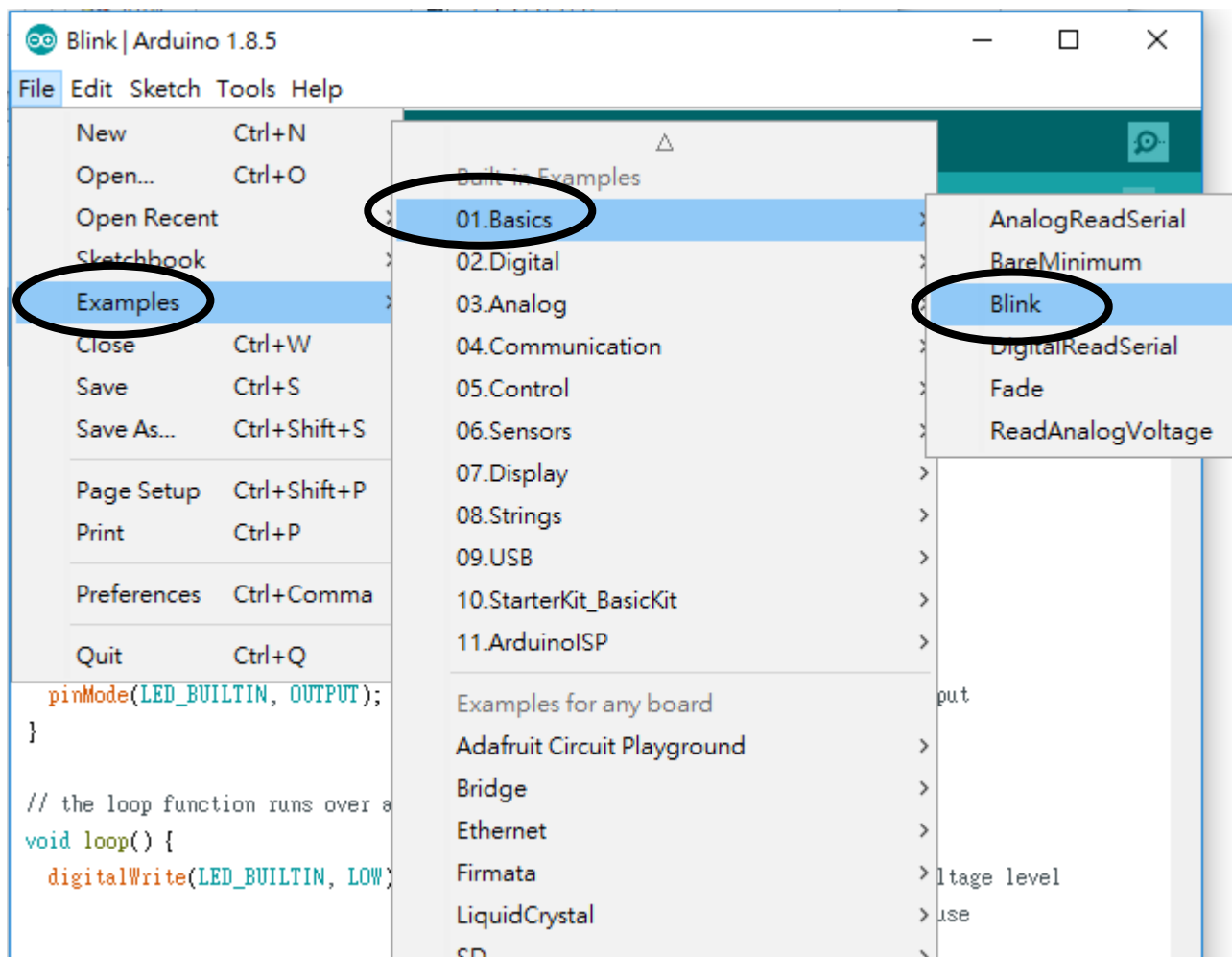


2b. 設定 Arduino IDE 為以下設定 2 ():

找 Arduino / Genuino (Uno) , Port 數值未必如下圖所示。



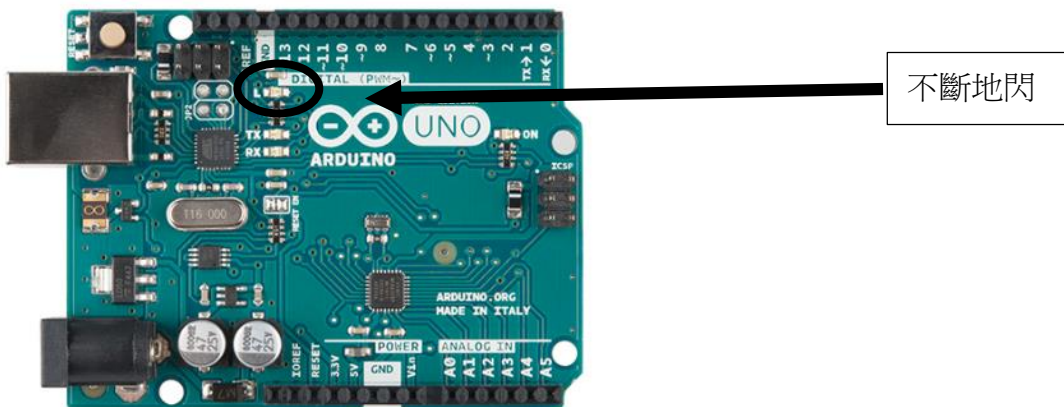
3. 開啟 File → Examples → 01. Basic → Blink



4. 按  下載至 Arduino 的主機板中。



5. 看看主機板中，燈不斷地閃



在主機板中，燈是否不斷地閃？ 是 / 否 (5 分)

6. 進階題: 把程式的 `delay(2000)` 的數值改為 500 或其他值，試試看有什麼變化。

```
digitalWrite(LED_BUILTIN, LOW); // Turn the LED on (Note that LOW is the voltage level
                                // but actually the LED is on; this is because
                                // it is active low on the ESP-01)
delay(500); // Wait for a second
digitalWrite(LED_BUILTIN, HIGH); // Turn the LED off by making the voltage HIGH
delay(500); // Wait for two seconds (to demonstrate the active low LED)
```

改變該數值後，閃燈有什麼變化？ (5 分)

Arduino 程式碼解說

程式碼解說

<code>void setup() {</code>	← 初始設定區塊 (只執行一次)
<code>pinMode(LED_BUILTIN, OUTPUT);</code>	← 設定輸出
<code>}</code>	
<code>void loop() {</code>	← 重複執行區塊 (不斷地重複執行)
<code>digitalWrite(LED_BUILTIN, HIGH);</code>	← LED 燈開啟
<code>delay(1000);</code>	← 等待
<code>digitalWrite(LED_BUILTIN, LOW);</code>	← LED 燈關閉
<code>delay(1000);</code>	← 等待
<code>}</code>	