Blinking LED

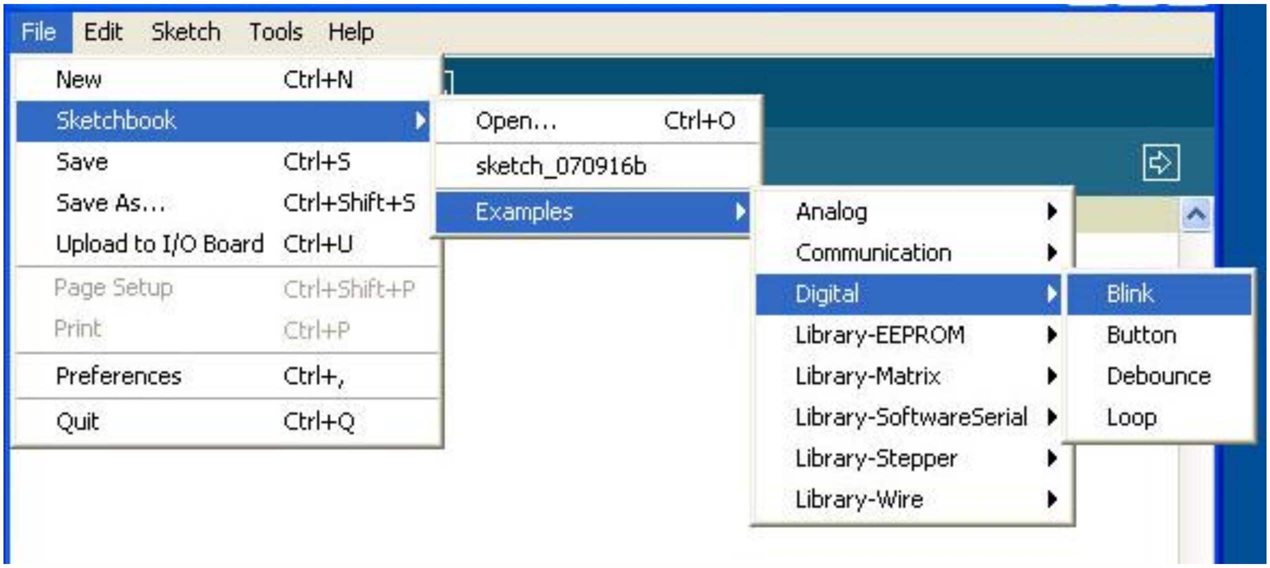
Physical Science and Technology

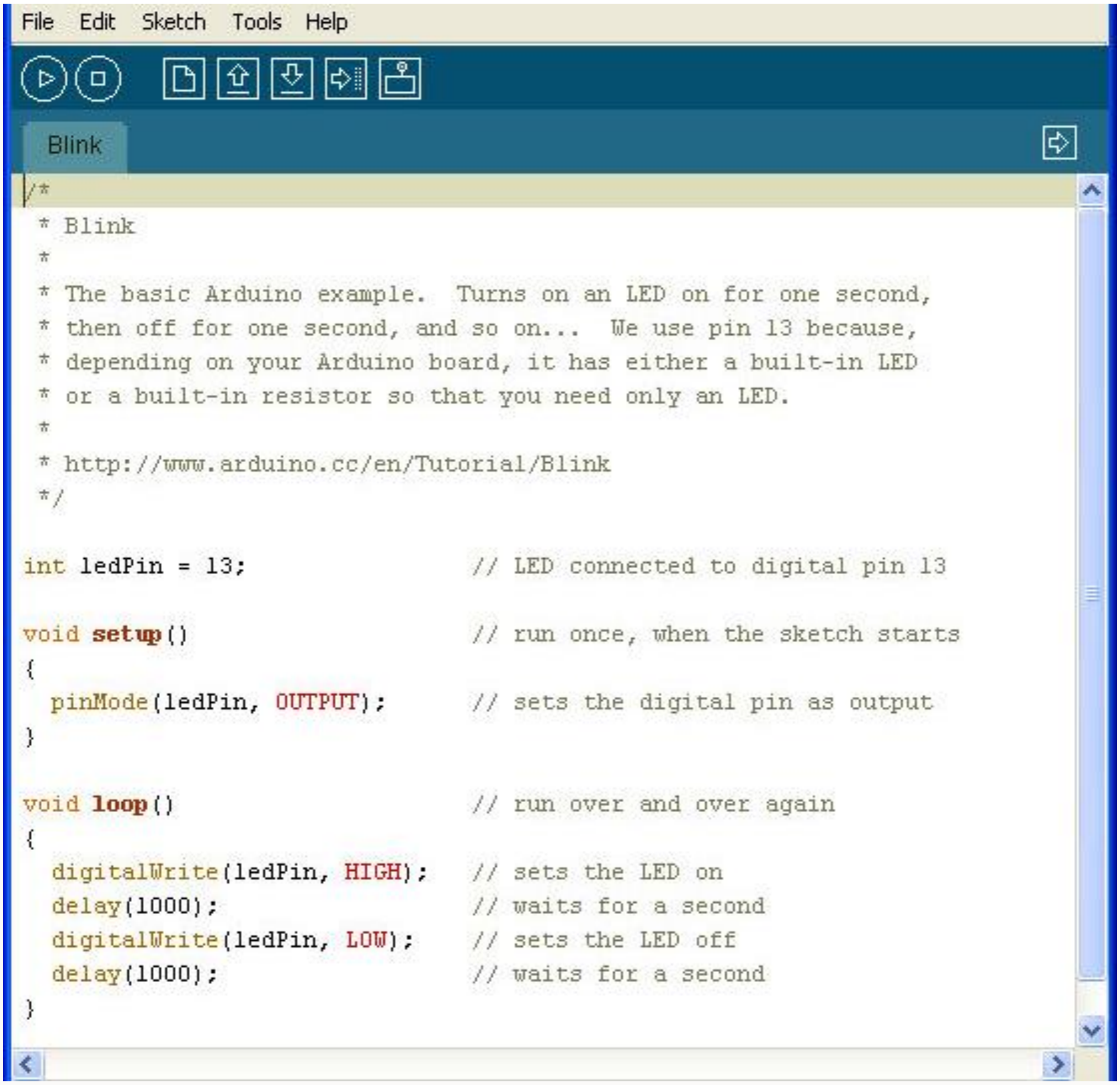
This lesson was adapted from original work by Limor Fried that is posted on http://www.ladyada.net/learn/arduino.

The goal of this activity is to make an Arduino controller cause an LED (a type of light bulb) to blink on and off.

Begin by hooking up the Arduino controller and running the main Arduino program. Under the "Tools" menu, select the correct serial port (it will refer to an Arduino Uno controller).

Open up the blink sketch by going to the File menu -> Sketchbook -> Examples -> Digital -> Blink.





```
/*
 * Blink
 *
 * The basic Arduino example.  Turns on an LED on for one second,
 * then off for one second, and so on...  We use pin 13 because,
 * depending on your Arduino board, it has either a built-in LED
 * or a built-in resistor so that you need only an LED.
 *
 * http://www.arduino.cc/en/Tutorial/Blink
 */

int ledPin = 13;                // LED connected to digital pin 13

void setup()                    // run once, when the sketch starts
{
  pinMode(ledPin, OUTPUT);      // sets the digital pin as output
}

void loop()                     // run over and over again
{
  digitalWrite(ledPin, HIGH);   // sets the LED on
  delay(1000);                  // waits for a second
  digitalWrite(ledPin, LOW);    // sets the LED off
  delay(1000);                  // waits for a second
}
```

Instructions:

1. Modify the code so that the output pin will be digital pin 10
2. Modify the code so that the LED will cycle through the following sets of blinking patterns:
   a. 1 second on, 2 seconds off (Repeat 4 times)
   b. 0.5 seconds on, 4 seconds off (Repeat 2 times)
   c. 2 seconds on, 0.25 seconds off (Repeat 4 times)
3. Make sure that your code is properly formatted and commented
4. Using a breadboard, jumpers, and the supplied LED and resistor, correctly wire the LED to the Arduino
5. Verify, compile, and upload the code to test your project
6. Modify and correct your code and wiring, if necessary