

Name: _____ Date: _____ Class: _____

Introduction to Arduino Handout

What is Arduino?

Arduino is an open-source platform used for a variety of purposes that includes hardware and software for constructing electronics projects. The hardware is essentially a microcontroller on a circuit board that can read and write information to digital or analog pins on the board. An Arduino software package is installed on your main computer and it is used to write and upload computer programs to the microcontroller through a USB port.

The Layout of a Sketch

Programs in Arduino are called *sketches* and consist of two sections, the `setup()` function and the main `loop()`.

The **setup()** function is called when a sketch starts. It is used to initialize variables, pin modes and libraries. It runs one time when the board is powered up or at rest.

Code within the **main loop()** runs repeatedly. It is within this loop that analog or digital pin values are read or updated. It is within this section of code that you program events to happen, such as the blink of a light, the activation of a servomotor or the reading of a sensor value.

Coding in Arduino is very similar to C++ or Java and is quite easy to learn. Below is the framework for a sketch. *Good programming always includes comments that are helpful for further code development, debugging and maintenance.* **Commenting** can be done by beginning lines with two slashes (`//`) at the start of each line or by putting (`/*`) at the start of a section and (`*/`) at the end of the section.

```
// define your global variables here
```

```
void setup() {
```

```
    // put your setup code here and it runs once on power-up or reset
```

```
}
```

```
void loop() {
```

```
    // put your main code here and runs repeatedly
```

```
}
```

For more detailed information, consult the Arduino tutorial at:

<http://www.ladyada.net/learn/arduino/lesson1.html>