**Terms**

* Sketch and Arduino program file. ‘circuitPlayground.ino’
* Function: a little program with in the program.
* Variable: a named value that’s stored in the micro-computers memory
  + int: a large number with no decimals
  + Float a large number with decimals
  + Byte: a number between 0 -255
  + Bool: a True (HIGH, 1) or False (LOW, 0) value
* Library: a separate file that has code for other functionality - methods/functions – (.h or .cpp file extension)
  + Must be in the default library folder or the same directory as the sketch ‘.ino’ file.
* Neopixel: a small LED light that can be any RGB color.
  + Can be any RGB combination with each value being between 0-255
* Serial Monitor: a virtual display console
* Serial.print(); print something to the serial monitor without a new line return.
* Serial.println(); print something to the serial monitor with new line return.

**Basic of the Arduino Coding Structure**

* All code before the “setup” applies to the whole sketch file program.  
  I.E., #include <some library.h>
* Setup() {}

Anything inside the {} will run once at the start of the program.

I.E., Serial.begin(9600); starts the serial monitor (console) at 9600 bps.

CircuitPlayground.begin(); starts the CPX device.

* Loop() {}

Anything inside the {} will run over and over continuously after the setup.

**Circuit Playground Code for Arduino IDE**

* CircuitPlayground.redLED(HIGH);  
  Turns on/off red LED at D13**.** HIGH = on/LOW = off (1, 0 or true, false)
* CircuitPlayground.clearPixels();

Turns off all neopixels

* CircuitPlayground.setPixelColor(PixelIndex, Red, Green, Blue);  
  Turns on a neopixel. Pixel index #0-9, RGB = 0 -> 255
* CircuitPlayground.setPixelColor(PixelIndex, CircuitPlayground.colorWheel(Color));  
  each number is a rainbow color Color=0 -> 255
* CircuitPlayground.setBrightness(b);  
  set brightness. b= 0 -> 255
* CircuitPlayground.lightSensor():  
  Gives light sensor value. value = 0 -> 1023
* CircuitPlayground.mic.soundPressureLevel(time);  
  Gives microphone value. value = 50 -> 100, time = 1 -> 10
* Circuit Playground.motionX():

Gives X tilt value. Value = -10 -> 10

Gives Y tilt value. Value = -10 -> 10

Gives Z tilt value. Value = -10 -> 10

* CircuitPlayground.temperature();

Gives temp value in Celsius.

* CircuitPlayground.temperatureF();

Gives temp value in Fahrenheit.

* CircuitPlayground.playTone(frequency, note-length);  
  Plays tone. Freq. 0 -> 20,000 & not-length in milliseconds
* CircuitPlayground.noTone();
* CurcuitPlayground.readCap(3)

Reads the value of touch sensor 3 (Touch sensors are 0, 1, 2, 3, 6, 9, 10,1 2)