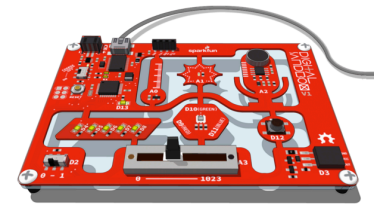




Sparkfun Electronics Arduino Quick Reference Sheet



Structure

```
/* Each Arduino sketch must contain the following two functions. */
```

```
void setup()
{ // this code runs once at the beginning of the code execution.
}
```

```
void loop()
{ // this code runs repeatedly over and over as long as the board is powered.
}
```

Comments

```
// this is a single line comment
/* this is a multiline comment */
```

Setup

```
pinMode(pinNum, INPUT/OUTPUT/INPUT_PULLUP);
/* Sets the mode of the digital I/O pin. All pins are general I/O on the board. You must define what the pin will be used for at the beginning of your code in setup() */
```

Control Structures

```
if(condition)
{ // if condition is true, do something here
}
else
{ // otherwise, do this
}
```

```
for(init; condition; increment)
{ // do this
}
```

Digital I/O

```
digitalWrite(pin, val);
/* val = HIGH or LOW write a HIGH or a LOW value to a digital pin. */
```

```
buttonVal = digitalRead(pin);
/* Reads the value from a specified digital pin, either HIGH or LOW. */
```

Analog I/O

```
analogWrite(pin, val);
/* Writes an analog value to a pin. val = integer value from 0 to 255 */
```

```
sensorVal = analogRead(pin);
/* Reads the value from the specified analog pin. */
```

Time

```
delay(time_ms);
/* Pauses the program for the amount of time (in milliseconds). */
```

```
delayMicroseconds(time_us);
/* Pauses the program for the amount of time (in microseconds). */
```

```
millis();
/* Returns the number of milliseconds since the board began running the current program. max: 4,294,967,295 */
```

```
micros();
/* Returns the number of microseconds since the board began running the current program. max: 4,294,967,295 */
```

```
/* The 'for' statement is used to repeat a block of statements enclosed in curly braces. An increment counter is usually used to increment and terminate the loop. */
```

Digital SandBox Pins

Outputs

White LEDs: pins 4 - 8, and 13
RGB LED: pins 9, 10, and 11
Motors \ etc: pin 3

Inputs

Switch: pin 2
Push Button: pin 12
Temperature (TMP36): pin A0
Light: pin A1
Sound: pin A2
Slider: pin A3
I2C or other: pins A4/A5

Data Types

void // nothing is returned
boolean // 0, 1, false, true
char // 8 bits: ASCII character
byte // 8 bits: 0 to 255
int // 16 bits: -32,768 to 32,767
unsigned int // 16 bits (unsigned)
long /* 32 bits: -2,147,483,648 to 2,147,483,647 */
unsigned long // 32 bits (unsigned)
float // 32 bits, signed decimal

Constants

HIGH \ **LOW**
INPUT \ **OUTPUT** \ **INPUT_PULLUP**
true \ **false**

