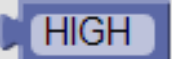


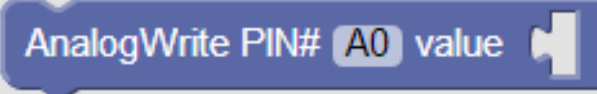


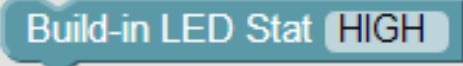
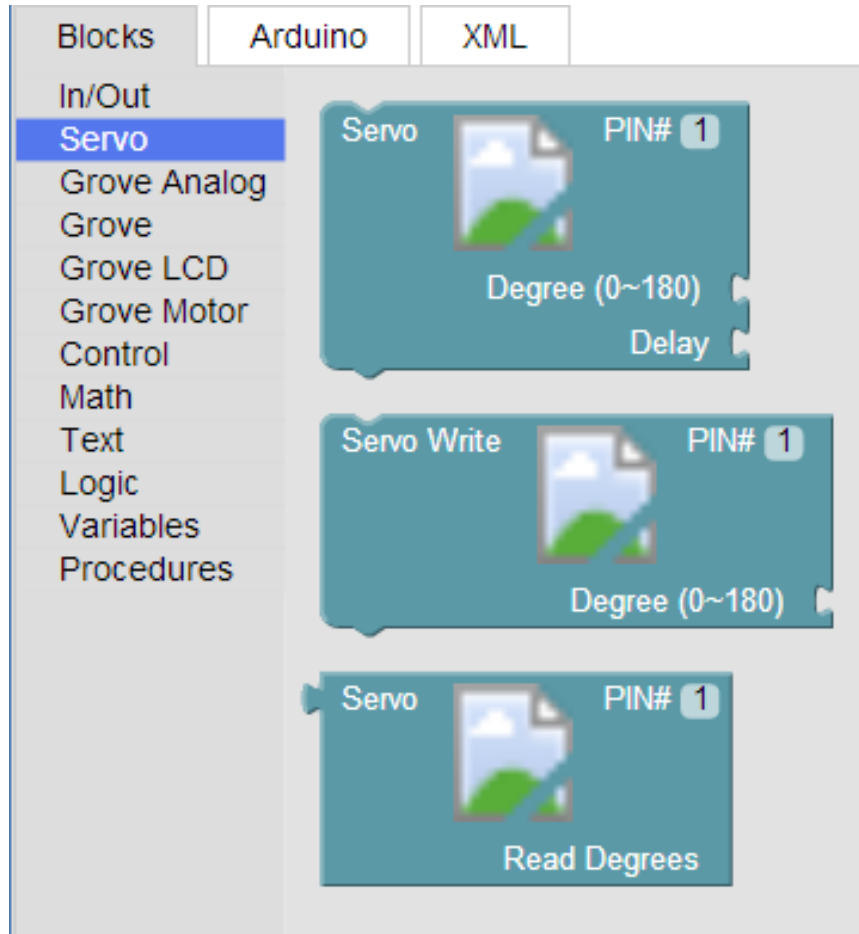


# Blockly Arduino: In/Out

Blocks	Arduino	XML
In/Out		State of Pin: Current on or off
Servo		
Grove Analog		
Grove		Set Pin on Arduino to On or Off
Grove LCD		
Grove Motor Control		Read Value from Arduino Pin On or Off
Math		
Text		Send voltage value to Analog Pin
Logic		
Tone		
Variables		Read variable voltage from Analog Pin (0 to 1023)
Procedures		Print Text to Serial Output
		On or Off for LED light on Arduino (Also Pin 13)

# Blockly Arduino: Servo



Sends Servo Signal to Pin.

Degree: Value of Servo Signal  
(0 Left, 90 Off, 180 is right)

Delay: How many seconds to send  
the signal)

Sends Signal to Pin:

Degree: Value of Servo Signal  
(0 Left, 90 Off, 180 is right)

Reads current value from servo  
Pin of Position in Fixed Servo.

# Blockly Arduino: Control

The image shows the Blockly Arduino interface. On the left, a sidebar lists various block categories: Blocks, In/Out, Servo, Grove Analog, Grove, Grove LCD, Grove Motor, Control (highlighted in blue), Math, Text, Logic, Tone, Variables, and Procedures. The main workspace has two tabs: 'Arduino' and 'XML'. Three green control blocks are visible: a 'Delay' block, an 'if' block with a plus sign, and a 'count with i from to do' block.

Delay: Pauses execution or flow of the program in milliseconds. 1000 milliseconds = 1 second.

Conditional Statement. Measures condition and executes code in block.

For Loop: Will execute code in block in reference to index variable.

# Blockly Arduino: Math

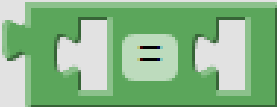
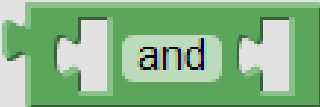


The screenshot shows the Blockly Arduino interface. On the left, a sidebar lists various block categories: Blocks, In/Out, Servo, Grove Analog, Grove, Grove LCD, Grove Motor, Control, **Math** (highlighted), Text, Logic, Tone, Variables, and Procedures. The main workspace is divided into two tabs: 'Arduino' and 'XML'. Under the 'Arduino' tab, three blocks are visible: a 'Map' block with the text 'value to [0- ]', a '0' block, and an addition block with a '+' sign.

Map Value: Not Used

Set a numerical Value

Adds (Subtracts, Multiplies, Divides) two values. Returns result.

# Blockly Arduino: Logic

Blocks	Arduino	XML
In/Out		Compares two values. Returns true or false.
Servo		
Grove Analog		
Grove		
Grove LCD		Boolean Statements (AND, OR, NOT . . .) Returns True or False
Grove Motor		
Control		NOT block
Math		
Text		
<b>Logic</b>		Returns no value.
Tone		
Variables		
Procedures		

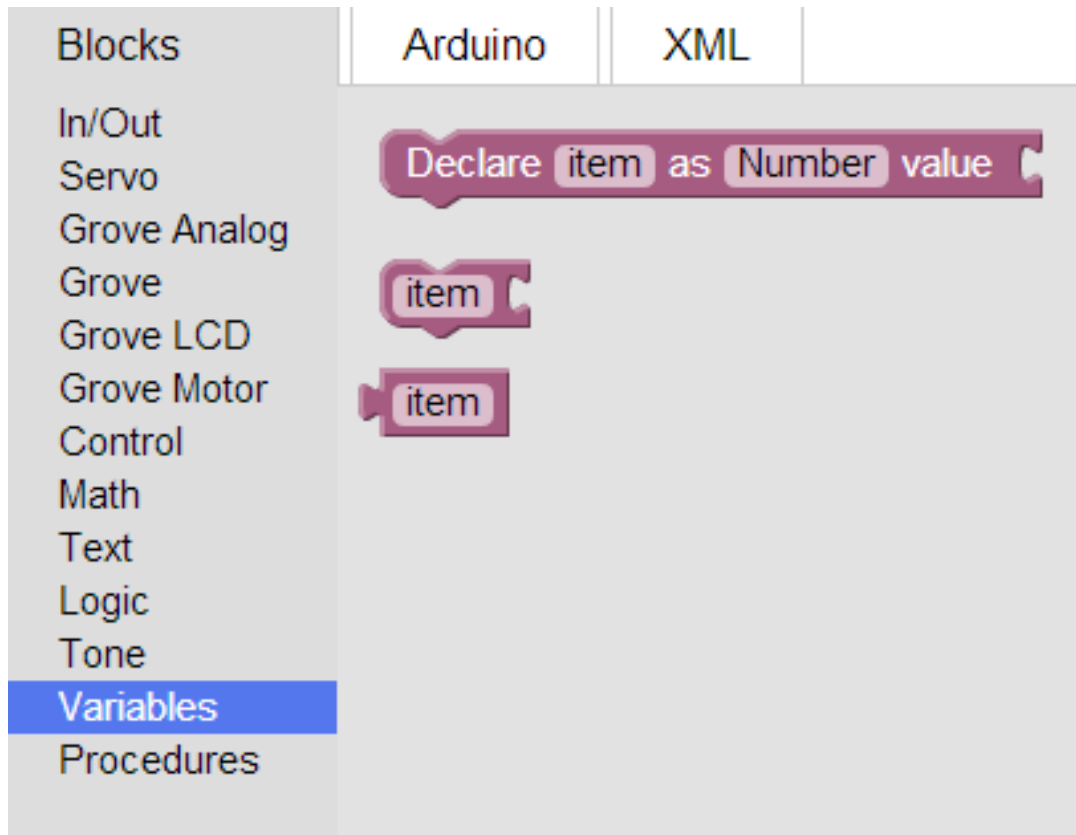
# Blockly Arduino: Tone

The screenshot shows the Blockly Arduino interface. On the left is a vertical menu of block categories: Blocks, In/Out, Servo, Grove Analog, Grove, Grove LCD, Grove Motor, Control, Math, Text, Logic, **Tone** (highlighted in blue), Variables, and Procedures. At the top, there are two tabs: 'Arduino' and 'XML'. The main workspace contains two 'Tone' blocks. The top block is 'Tone PIN# 1 Pitch C4 Delay' and has a blue arrow pointing to the right. The bottom block is 'Tone PIN# 1 Pitch C4'.

Plays a Pitch on PIN#  
Delay: Duration of  
Pitch.

Plays a Pitch on PIN#  
without Delay.

# Blockly Arduino: Variables



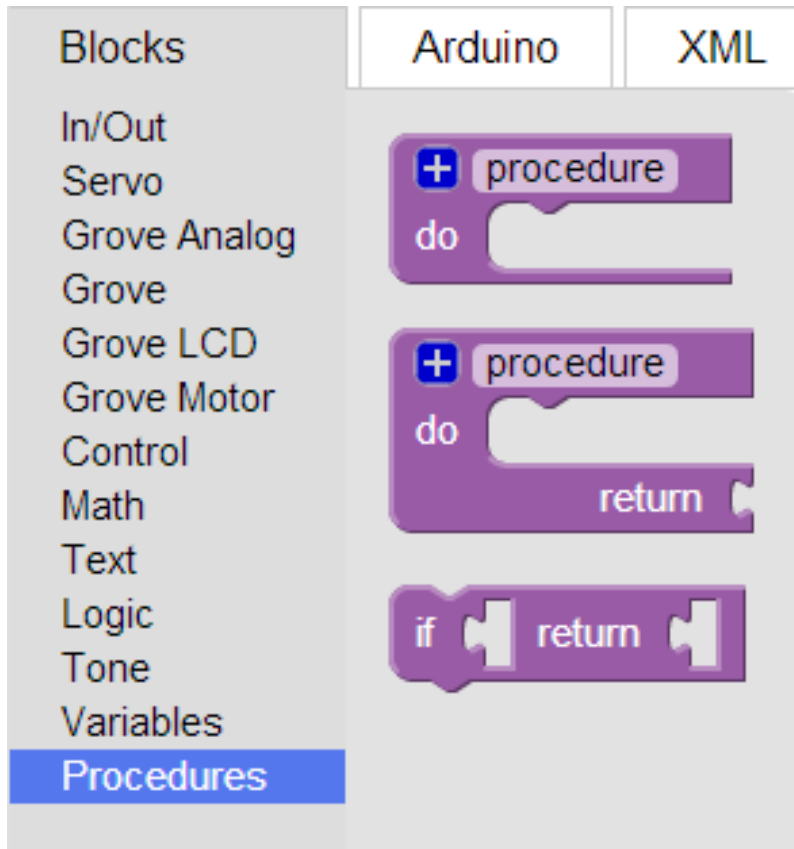
The image shows a screenshot of the Blockly Arduino interface. On the left is a vertical menu of block categories: Blocks, In/Out, Servo, Grove Analog, Grove, Grove LCD, Grove Motor, Control, Math, Text, Logic, Tone, Variables (highlighted in blue), and Procedures. The main workspace is divided into two tabs: 'Arduino' and 'XML'. Under the 'Arduino' tab, three variable blocks are visible: a 'Declare' block with 'item' as the variable name and 'Number' as the type, and two 'item' blocks representing the variable's value.

Create a Variable for numerical or text value.

Sets the value of a created variable.

Returns the current value of the variable.

# Blockly Arduino: Procedures



Define a procedure (function) without a return value.

Define a procedure (function) with a return value.

Compares the return value of a function to a value. Returns True or false.

'Do' blocks run defined functions.