
Revision

Input Vs Output

Mouse

Keyboard

Light Sensor

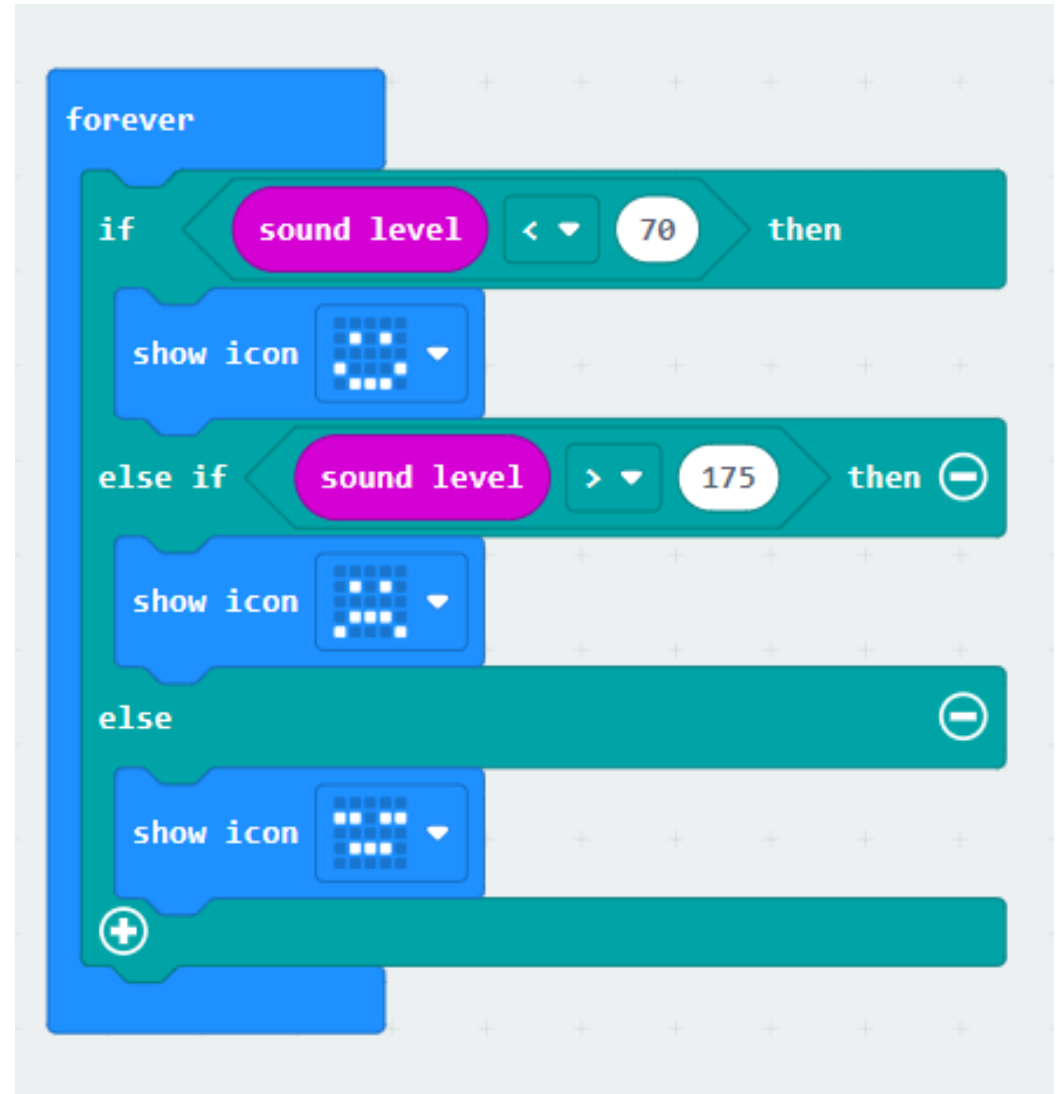
Screen

Touch-Screen

Buttons

Microphone

If Statements



Digital Vs Analog

What is a component?

Digital Components

Two options: On and Off.

In programs we use 1 (on) and 0 (off).

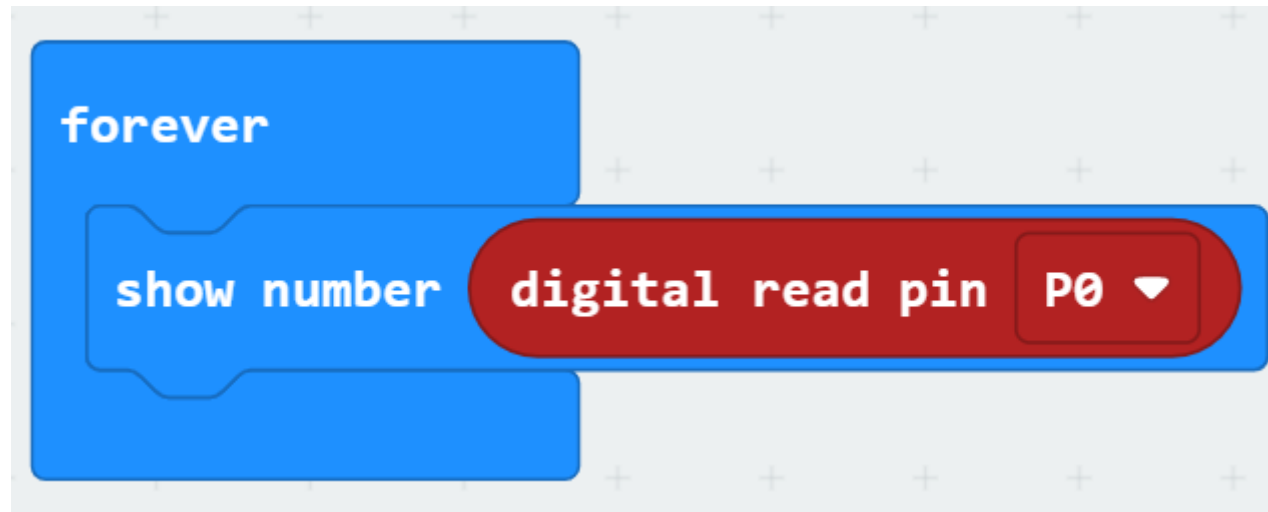
Digital Output



```
forever
  digital write pin P0 to 1
  pause (ms) 500
  digital write pin P0 to 0
  pause (ms) 500
```

The image shows a Scratch code editor with a 'forever' loop. Inside the loop, there are four blocks: a red 'digital write pin' block with 'P0' selected in a dropdown and '1' in a text field; a blue 'pause (ms)' block with '500' in a text field; another red 'digital write pin' block with 'P0' selected and '0' in a text field; and a final blue 'pause (ms)' block with '500' in a text field. The background is a light gray grid.

Digital Input



Analog Components

A range of options available

Examples:

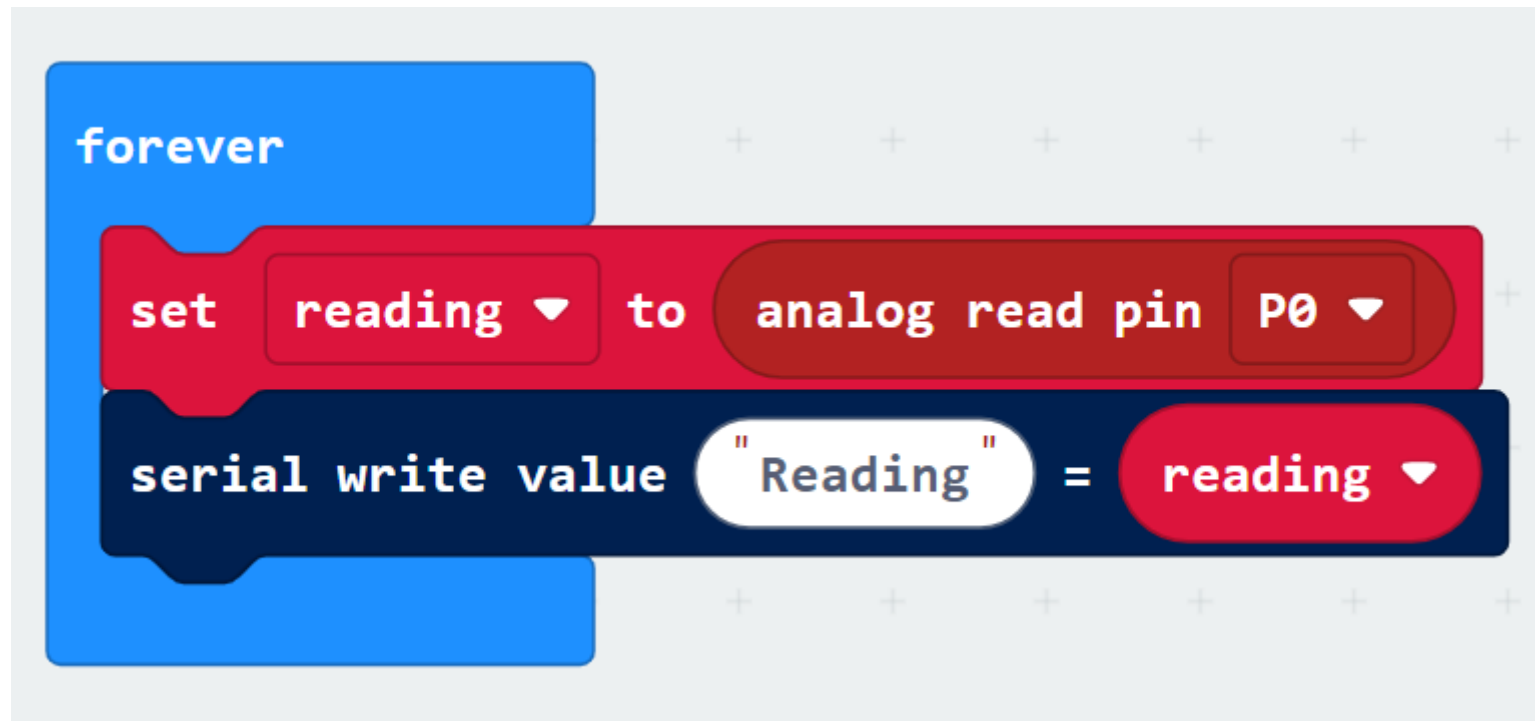
measurements

movements

Analog Output



Analog Input



```
forever
  set reading to analog read pin P0
  serial write value "Reading" = reading
```

The image shows a Scratch code block for an analog input loop. It consists of a blue 'forever' loop block containing two sub-blocks. The first is a red 'set' block where the variable 'reading' is set to the value of 'analog read pin P0'. The second is a dark blue 'serial write value' block where the string 'Reading' is followed by an equals sign and the variable 'reading'.

Analog Input

The screenshot displays the Microsoft MakeCode IDE interface for a micro:bit project. On the left, a virtual micro:bit board is shown with pins labeled 0, 1, 2, 3V, and GND. A V2 sensor is connected to pin 0. Below the board, two buttons are visible: "Show data Simulator" and "Show data Device". The "Show data Device" button is highlighted with a red rectangular box. The main workspace shows a data graph with a green waveform representing the analog input signal. The graph has a "Go back" button on the left and "Device" controls (stop, download, refresh) on the right. The current reading is displayed as "Reading: 657". At the bottom, a console window shows a list of recent readings: "Reading: 657", "Reading: 663", "Reading: 657", "Reading: 656", "Reading: 656", "Reading: 658", "Reading: 663", "Reading: 658", and "Reading: 657".

Using Variables

Variables

We can create variables in Makecode to save/store information in.

Variables



Electronics Activity

Breakout Board

This allows us to connect lots of different things to the Micro:Bit

Results Table

No.	Name	Input or Output?	Analog or Digital?	What does it do?
1				
2				
3				
4				
5				
6				
7				

Results Table

No.	Name	Input or Output?	Analog or Digital?	What does it do?
1	Step Sensor	I	D	Knows when you take a step
2	Speaker	O	A	Plays music
3				
4				
5				
6				
7				

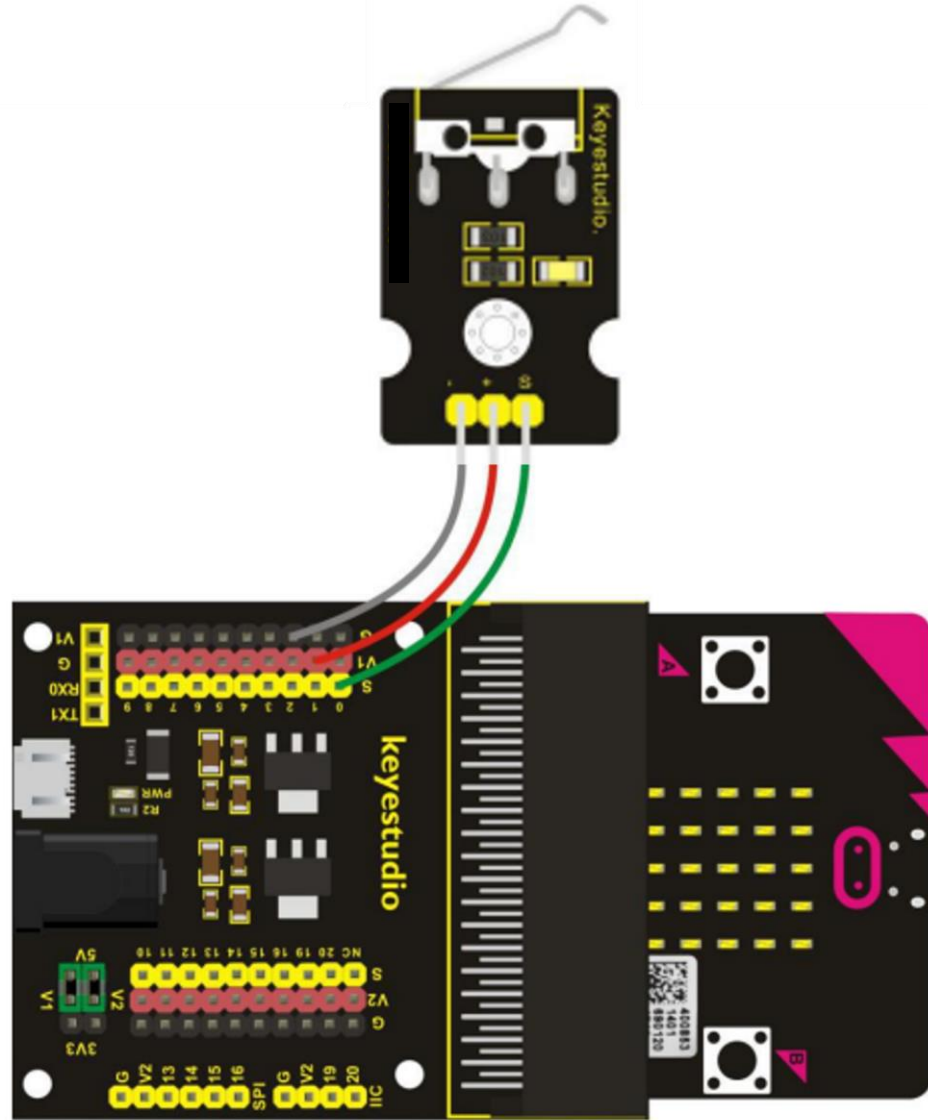
3, 4, or 5 Pin Components

3-pins have one programmable pin

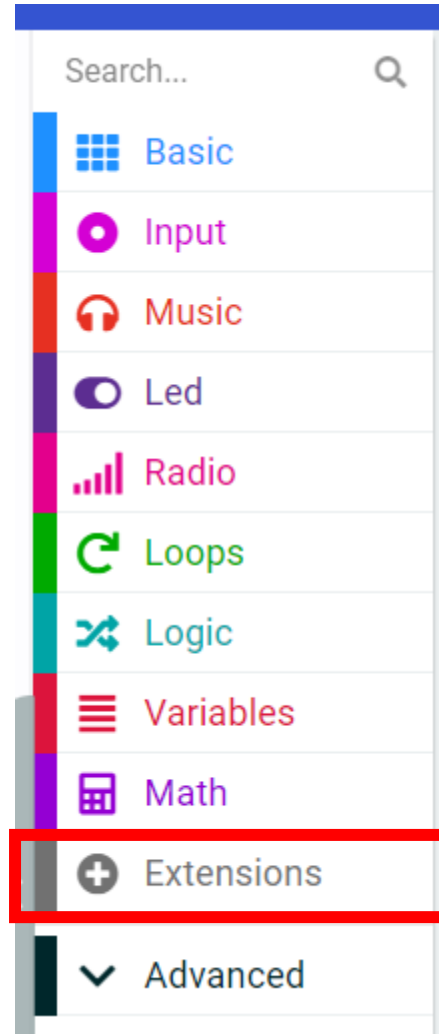
4-pins can have two programmable pins

5-pins can have three programmable pins

Wiring



Extensions



Extensions

← Go Back Extensions ?

Search or enter project URL...

Lights and Display Software Science Robotics Gaming Networking

Recommended Import File

- datalogger**
Data logging to flash memory. micro:bit (V2) only.
[Learn More](#)
- radio-broadcast**
Adds new blocks for message communication in the radio category.
[Learn More](#)
- servo**
A micro-servo library.
[Learn More](#)
- audio-recording**
Record sound clips. micro:bit (V2) only.
[Learn More](#)
- neopixel**
AdaFruit NeoPixel driver.
[Learn More](#)
- microturtle**
A LOGO-like turtle library.
[Learn More](#)
- sonar**
A MakeCode package to use sonar sensors.
[Learn More](#)
- kitronik-servo-lite**
Blocks to simplify using Kitronik Servo:Lite board in PXT.
[Learn More](#)
- kitronik-motor-driver**
Blocks to simplify using Kitronik products in PXT.
[Learn More](#)
- Grove**
A Microsoft MakeCode package for Seeed Studio Grove module.
[Learn More](#)

Safety Warnings

UV Torch – Do not shine anywhere other than on the sensors.

Safety Warnings

Magnets – Do not put the magnets on any computers/Micro:Bits or component boards.

Safety Warnings

Bright Lights – One of the LEDs is VERY bright do not look directly at.

Safety Warnings

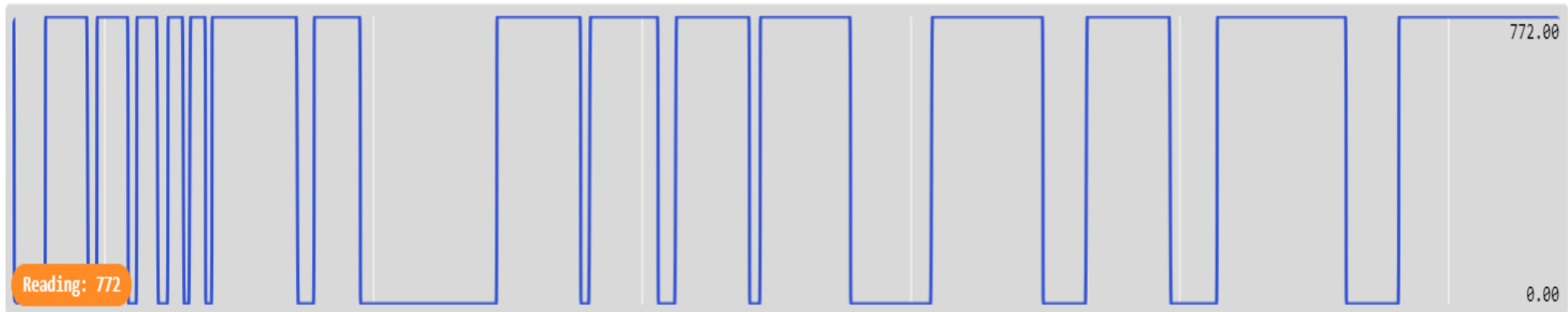
Loud Sounds – There is a VERY loud buzzer.

Website:

[Makecode.microbit.org](https://makecode.microbit.org)

Debugging

Digital Input Graph



Thanks
