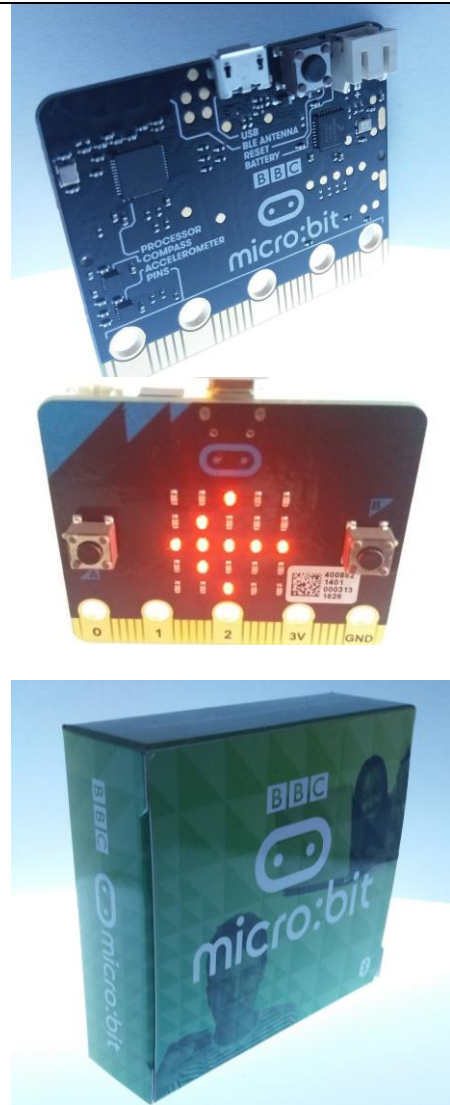


Block Editor



Menu

- Basic
- Input
- Loops
- Logic
- Variables
- Maths
- LED
- Music
- Game
- Images
- Pins
- Devices

Basic

show number 2

show leds

	0	1	2	3	4
0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

show string " Hello! "

clear screen

forever

pause (ms) 100

Input

on button A pressed do

on shake do

on pin P0 pressed do

button A is pressed

compass heading (°)

temperature (°C)

acceleration (mg) x

light level

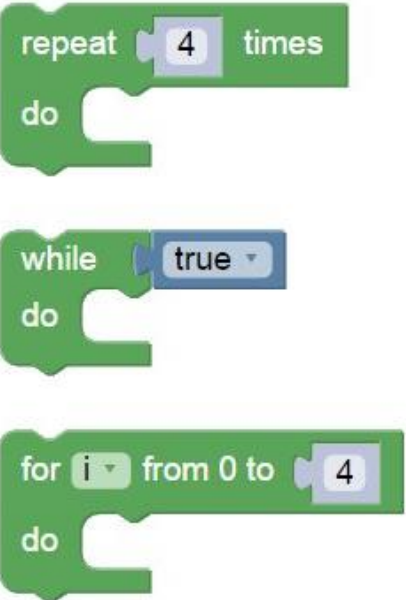
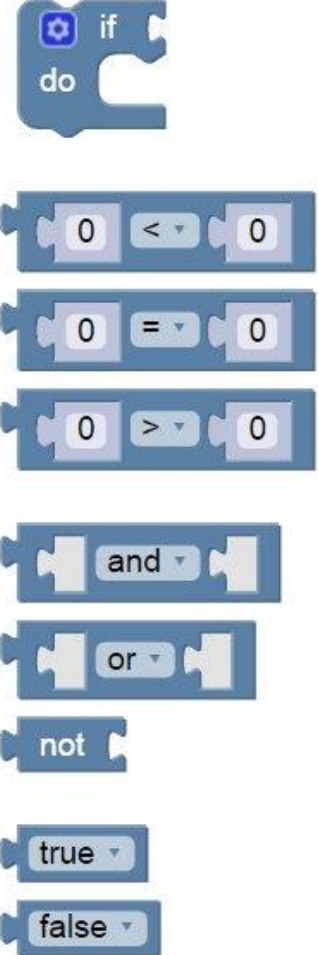
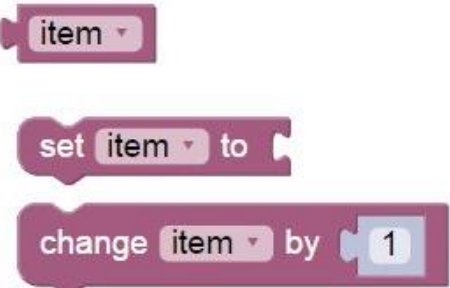
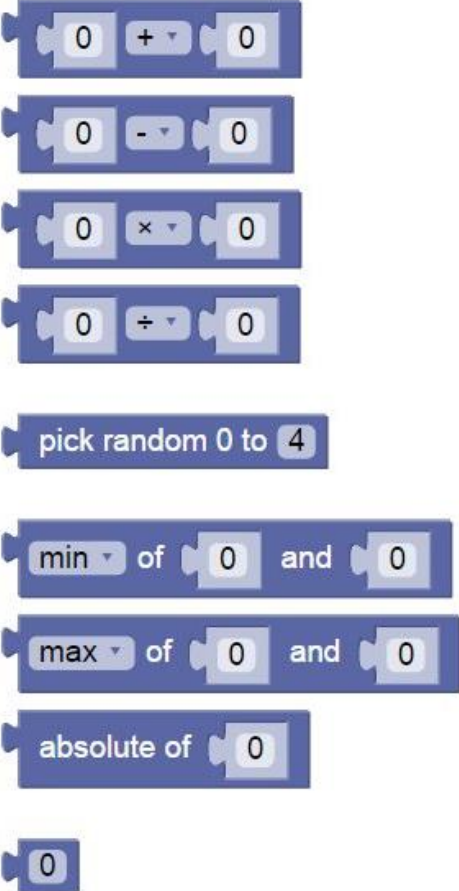
rotation (°) pitch

magnetic force (microT) x

running time (ms)

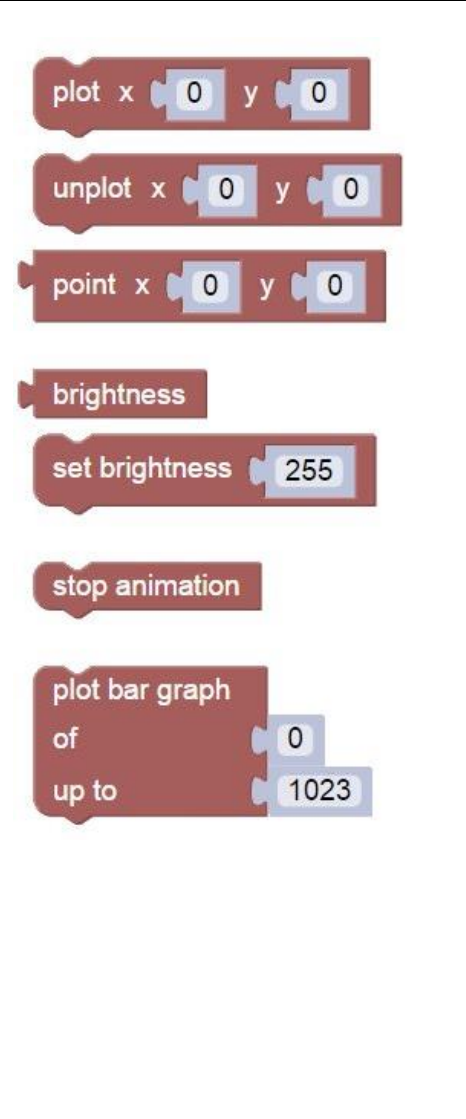
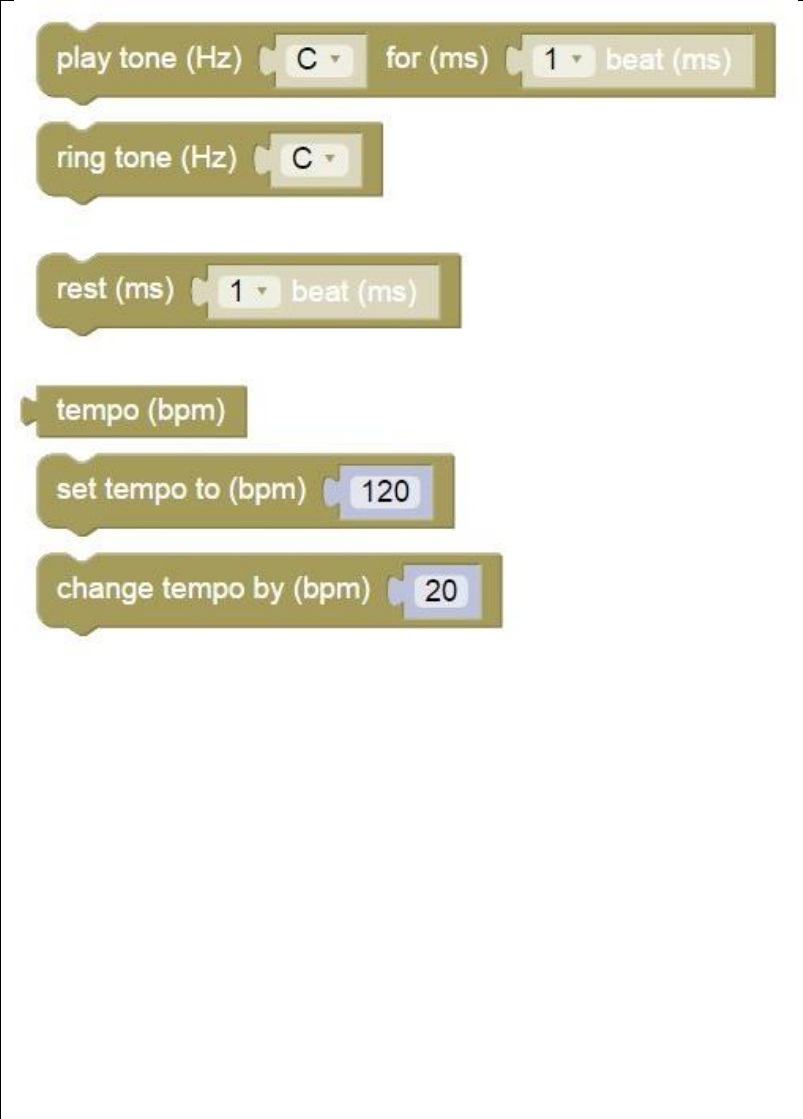
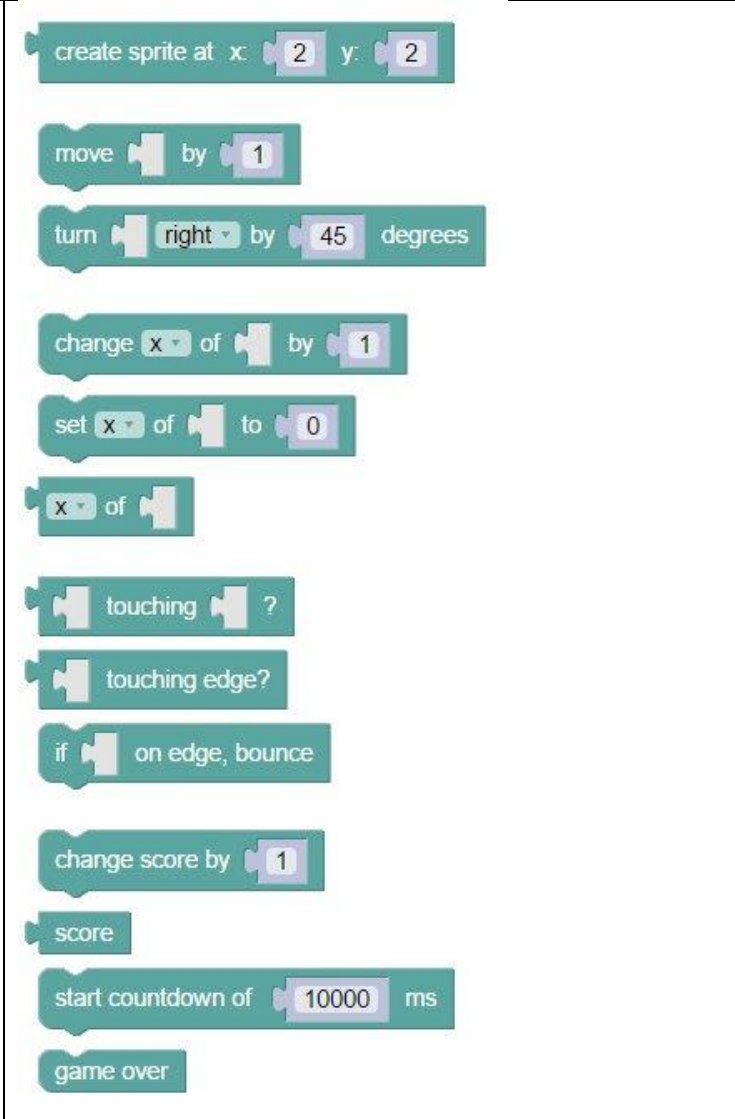
Microcontroller Tutorial Software Development

by Adrian Ashley B.Sc (Hons) M.Sc

Loops	Logic	Variables	Maths
			

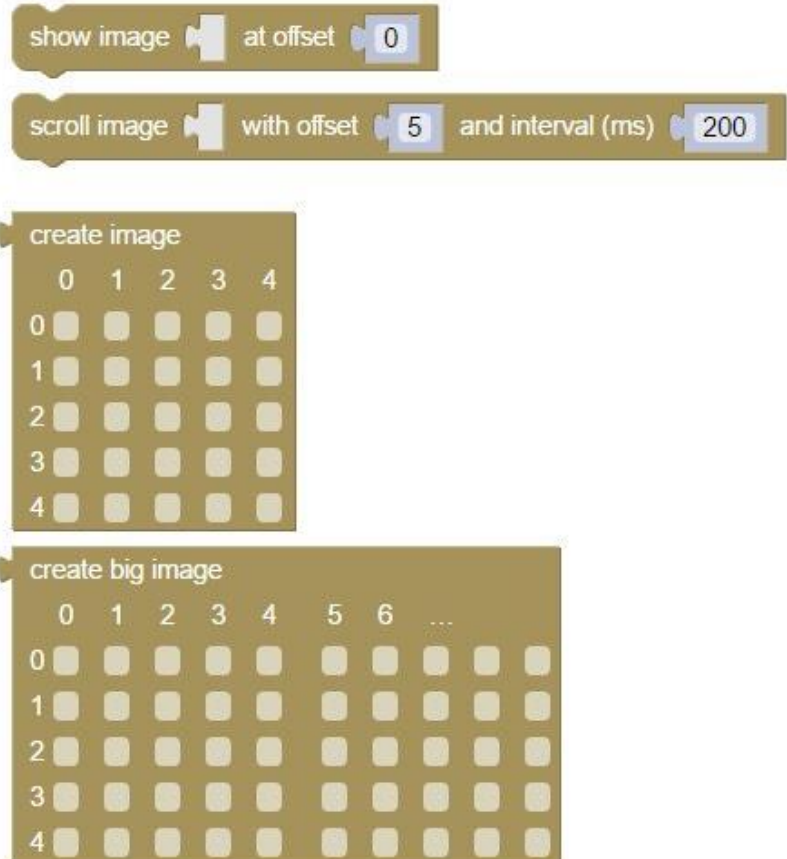
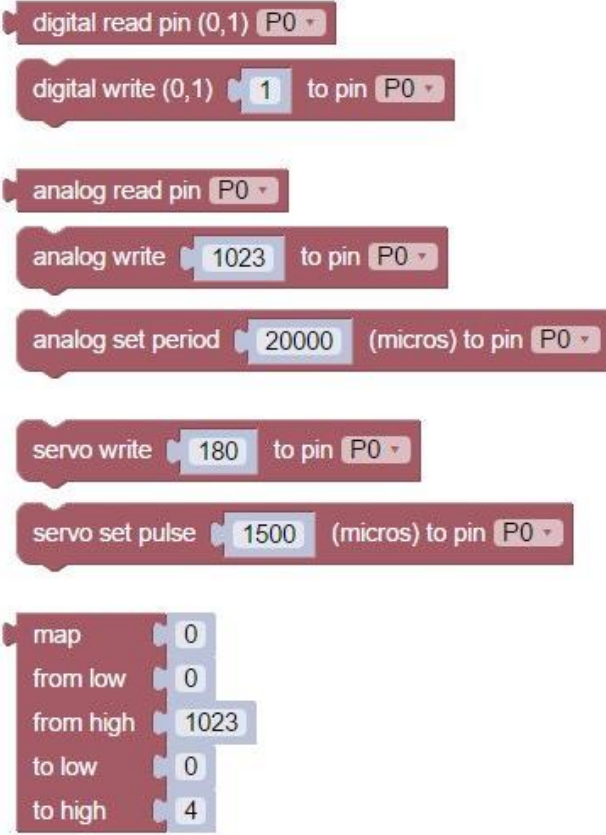

Microcontroller Tutorial Software Development

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LED	Music	Game
 <p>Scratch code for LED control:</p> <ul style="list-style-type: none">plot x: 0 y: 0unplot x: 0 y: 0point x: 0 y: 0brightnessset brightness: 255stop animationplot bar graph of 0 up to 1023	 <p>Scratch code for music control:</p> <ul style="list-style-type: none">play tone (Hz): C for (ms): 1 beat (ms)ring tone (Hz): Crest (ms): 1 beat (ms)tempo (bpm)set tempo to (bpm): 120change tempo by (bpm): 20	 <p>Scratch code for game logic:</p> <ul style="list-style-type: none">create sprite at x: 2 y: 2move by: 1turn right by: 45 degreeschange x of by: 1set x of to: 0x oftouching ?touching edge?if on edge, bouncechange score by: 1scorestart countdown of: 10000 msgame over

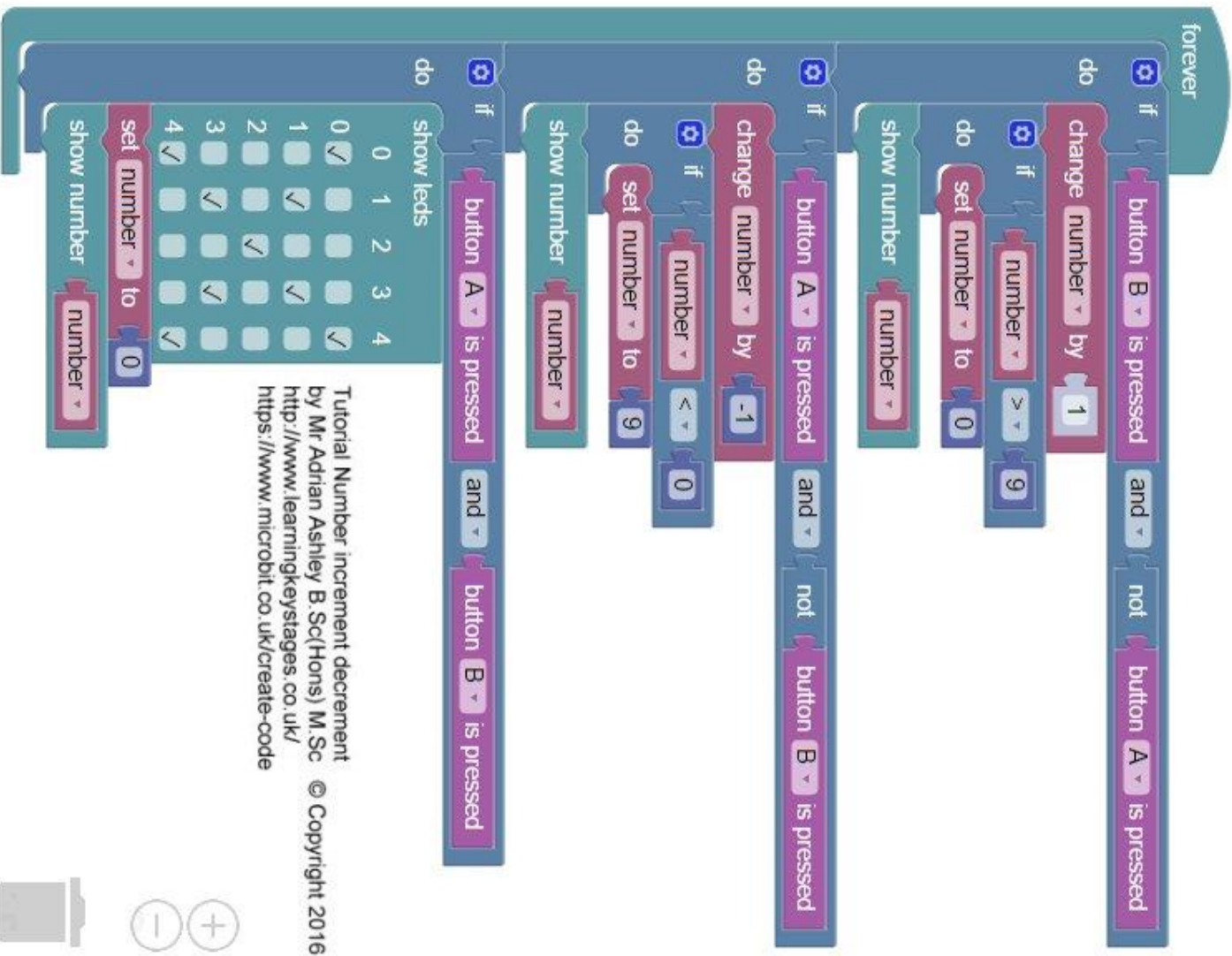
Microcontroller Tutorial Software Development

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Images	Pins	Devices																																																																																			
 <p>show image at offset 0</p> <p>scroll image with offset 5 and interval (ms) 200</p> <p>create image</p> <table border="1"><tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>0</td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td></td><td></td><td></td><td></td></tr></table> <p>create big image</p> <table border="1"><tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>...</td></tr><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	0	1	2	3	4	0					1					2					3					4					0	1	2	3	4	5	6	...	0								1								2								3								4								 <p>digital read pin (0,1) P0</p> <p>digital write (0,1) 1 to pin P0</p> <p>analog read pin P0</p> <p>analog write 1023 to pin P0</p> <p>analog set period 20000 (micros) to pin P0</p> <p>servo write 180 to pin P0</p> <p>servo set pulse 1500 (micros) to pin P0</p> <p>map</p> <table border="1"><tr><td>0</td></tr><tr><td>from low 0</td></tr><tr><td>from high 1023</td></tr><tr><td>to low 0</td></tr><tr><td>to high 4</td></tr></table>	0	from low 0	from high 1023	to low 0	to high 4	 <p>tell camera to take photo</p> <p>tell remote control to play</p> <p>raise alert to display toast</p> <p>on notified incoming call</p> <p>do</p> <p>signal strength</p> <p>on signal strength changed</p> <p>do</p> <p>All trademarks are the property of their respective owners and are acknowledged.</p>
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Number increment decrement

Learning Key Stages



The image shows a Scratch script for a microcontroller. It starts with a 'forever' loop. Inside the loop, there are two 'if' blocks. The first 'if' block checks 'button B is pressed' and 'not button A is pressed'. If true, it changes the 'number' by 1, then checks if 'number > 9'. If true, it sets 'number' to 0 and shows the number. The second 'if' block checks 'button A is pressed' and 'not button B is pressed'. If true, it changes the 'number' by -1, then checks if 'number < 0'. If true, it sets 'number' to 9 and shows the number. After the 'forever' loop, there is a 'do' block that shows a 4x4 grid of LEDs. The grid has columns labeled 0, 1, 2, 3, 4 and rows labeled 0, 1, 2, 3, 4. The LEDs are lit (checked) in a pattern: (0,0), (0,1), (0,2), (0,3), (0,4), (1,1), (1,2), (1,3), (1,4), (2,2), (2,3), (2,4), (3,3), (3,4), (4,4). Below the grid, it says 'set number to 0' and 'show number'.

Tutorial Number increment decrement
by Mr Adrian Ashley B.Sc(Hons) M.Sc © Copyright 2016
<http://www.learningkeystages.co.uk/>
<https://www.microbit.co.uk/create-code>