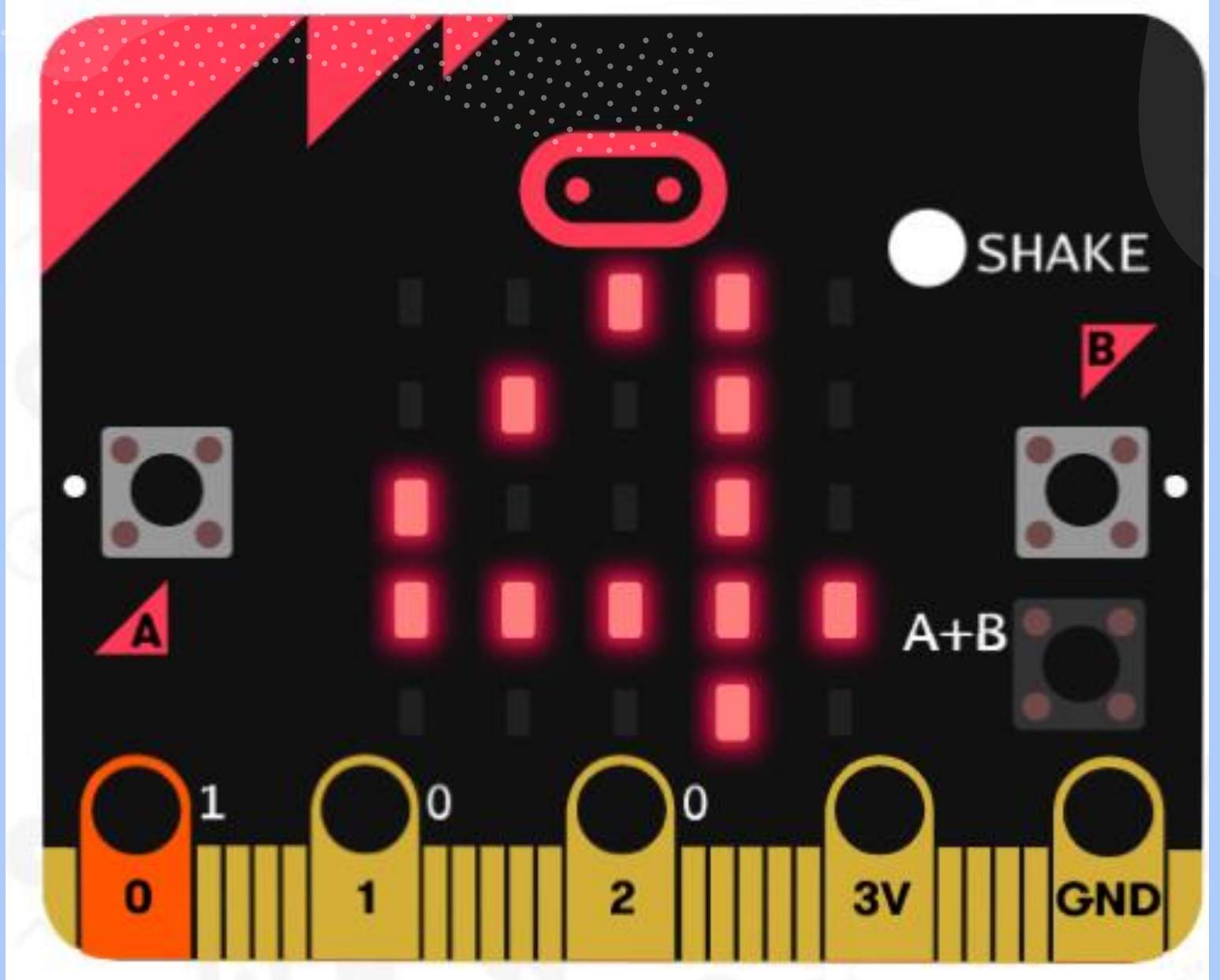


Micro:bit Movement Counter



Shared Projects Remix of Movement Counter

- Rotation counter
https://makecode.microbit.org/_av8fCgLu12W5
- Step on tin foil step pad
https://makecode.microbit.org/_LFF37PRCq7V7
- Stop:bit coloured lights
https://makecode.microbit.org/_Y4LPC7LH1iV1
- Steps with sound and buzzer
https://makecode.microbit.org/_FybdyeJpwJ5L
- Graphing steps with Excel & simulator
https://makecode.microbit.org/_09RYfwXz80C7
- and <https://makecode.microbit.org/00489-74772-72964-00579>

Wheel Rotation Counter

Wheel rotation counter.

Micro: bit is taped to the wheel rim upside down.

When sitting in the wheel chair, a person can tilt the Micro: bit to read rotations.

When Micro: bit reaches the bottom of the wheel, rotation count goes up by 1

on start

set Rotation to 0

on button A+B pressed

set Rotation to 0

start melody chase repeating once

Reset rotation counter to 0

on logo up

change Rotation by 1

pause (ms) 100

When the Logo faces up at the bottom of the wheel, rotation count goes up by 1

on logo up

shake

logo up

logo down

screen up

screen down

tilt left

tilt right

free fall

3g

6g

8g

Show the rotation count.

The Micro bit was mounted upside down so when the person tilts the micro bit, the number appears right side up.

forever

show number Rotation

pause (ms) 100

if Rotation ≥ 200 then

start melody power up repeating once

On the spot jogging with tin foil switch

The image displays a Scratch code editor with four blocks and two notes:

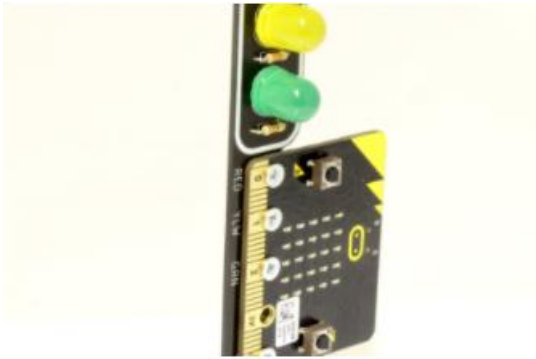
- on start** (blue block):
 - set **Steps** to 0
- forever** (blue loop block):
 - show number **Steps**
 - pause (ms) 100
- on pin P0 pressed** (purple block):
 - change **Steps** by 2
- on button A+B pressed** (purple block):
 - set **Steps** to 0

Two yellow notes provide context:

- Step Counter** for on the spot jogging
- When left shoe presses on tin foil and carboard switch then increase steps by 2

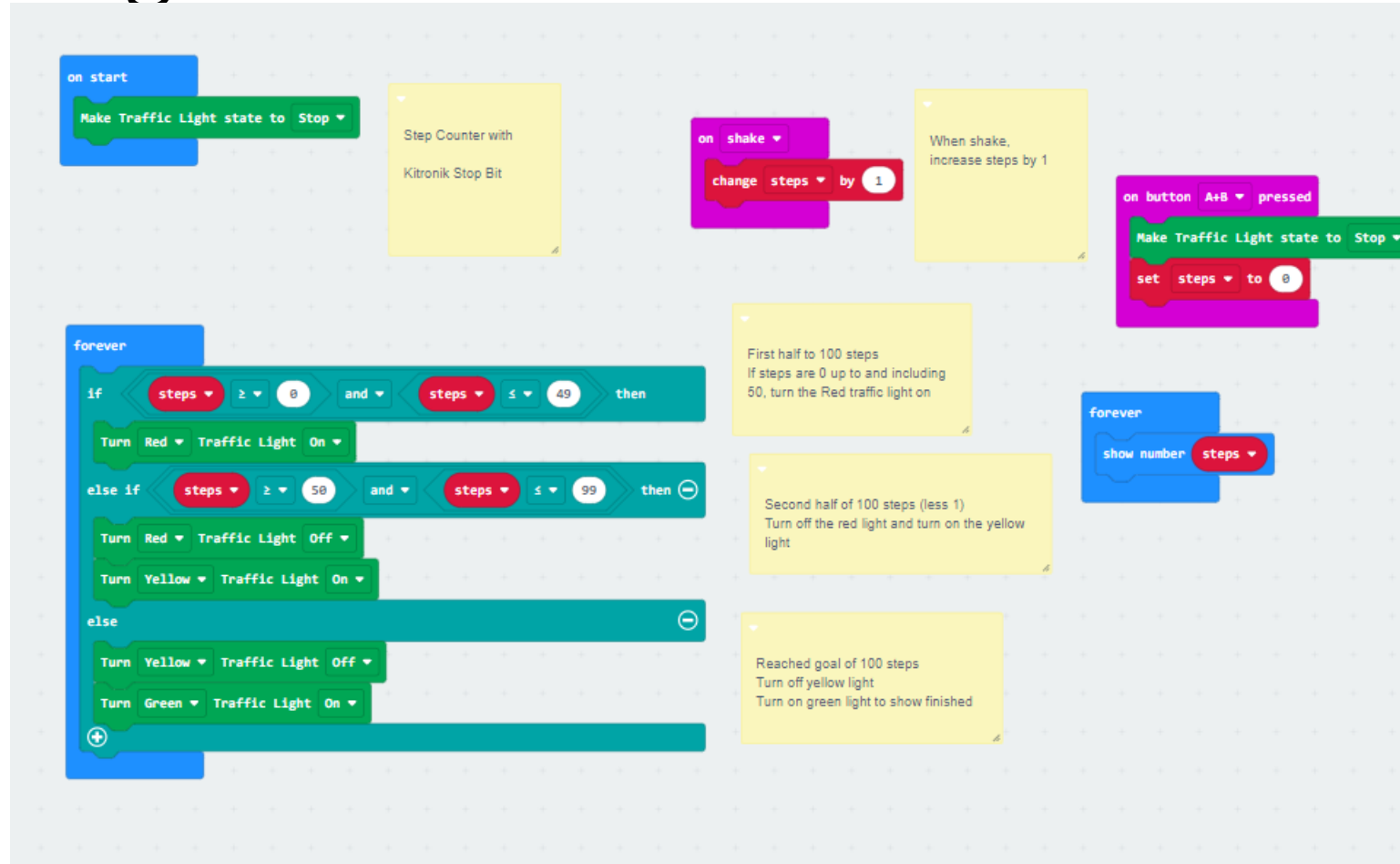
Make a remix of the code at https://makecode.microbit.org/_LFF37PRCq7V7

Stop:bit – Light changes at different zones



kitronik-stopbit

Custom blocks for STOP:bit for BBC micro:bit



The Scratch code editor displays a program for a traffic light controlled by a step counter. The program starts with an 'on start' event block that sets the traffic light state to 'Stop'. A 'Step Counter with Kitronik Stop Bit' block is used to track steps. An 'on shake' event block increments the step count by 1, followed by a 'When shake, increase steps by 1' block. A 'on button A+B pressed' event block sets the traffic light state to 'Stop' and resets the step count to 0. The main logic is contained in a 'forever' loop with three conditional branches: 1. If steps are between 0 and 49, the red traffic light is turned on. 2. If steps are between 50 and 99, the red light is turned off and the yellow light is turned on. 3. If steps reach 100, the yellow light is turned off and the green light is turned on. A 'show number steps' block is used to display the current step count.

```
on start
  Make Traffic Light state to Stop

Step Counter with Kitronik Stop Bit

on shake
  change steps by 1
  When shake, increase steps by 1

on button A+B pressed
  Make Traffic Light state to Stop
  set steps to 0

forever
  if steps >= 0 and steps <= 49 then
    Turn Red Traffic Light On
  else if steps >= 50 and steps <= 99 then
    Turn Red Traffic Light Off
    Turn Yellow Traffic Light On
  else
    Turn Yellow Traffic Light Off
    Turn Green Traffic Light On

show number steps
```

What is Stop:bit <https://www.youtube.com/watch?v=sfh7j-nq8GM>

Shared Code https://makecode.microbit.org/_Y4LPC7LH1iV1

Movement Counter with Sound

The image shows a Scratch script for a movement counter with sound. The script is organized into three main sections: initialization, movement tracking, and sound feedback.

```
on start
  set movement to 0

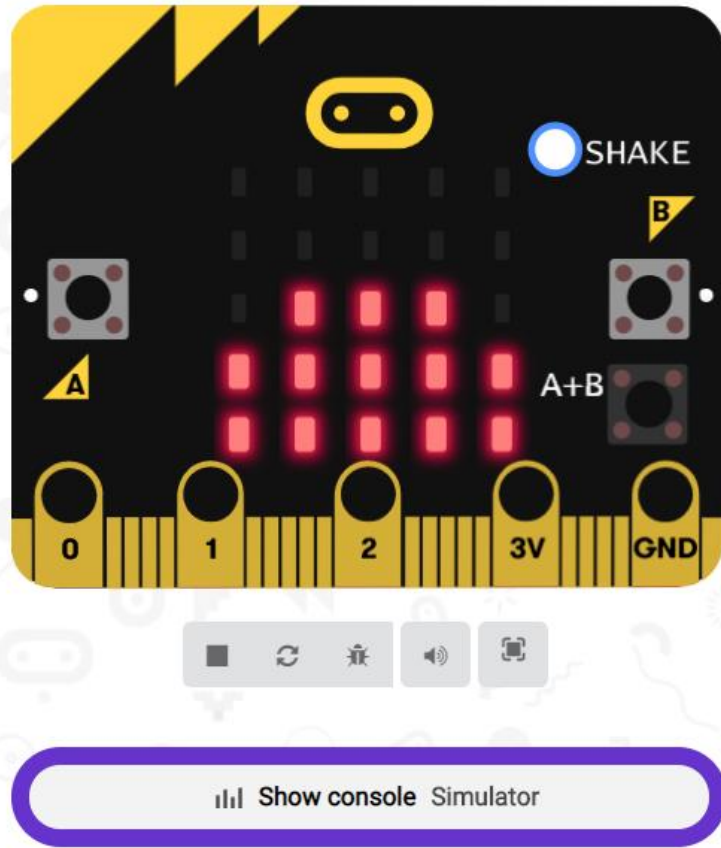
on shake
  change movement by 1

forever
  show number movement

forever
  if movement >= 0 and movement <= 49 then
    set volume 16
    play tone Middle C for 1 beat
    pause (ms) 2000
  else if movement >= 50 and movement <= 99 then
    set volume 21
    play tone Middle G for 1 beat
    pause (ms) 2000
  else
    start melody power up repeating once
    analog write pin P0 to 500
    pause (ms) 2000
    stop melody all
    analog write pin P0 to 0
```

The script starts with an 'on start' block that sets the 'movement' variable to 0. An 'on shake' block increments the 'movement' variable by 1. A 'forever' loop displays the current 'movement' value. A second 'forever' loop provides sound feedback based on the 'movement' value: if the value is between 0 and 49, it plays a 'Middle C' tone at volume 16; if the value is between 50 and 99, it plays a 'Middle G' tone at volume 21; otherwise, it starts a 'power up' melody, sets the analog output of pin P0 to 500, pauses for 2000ms, stops the melody, and sets the analog output of pin P0 to 0.

Micro:bit Step Counter Graphing



The image displays a Scratch script for a Micro:bit step counter and graphing. The script is organized into several sections:

- on start:** A blue 'clear screen' block followed by a yellow note 'Clear the screen Set steps to zero'. Below this are two red blocks: 'set step to 0' and 'set goal to 100'.
- on button B pressed:** A purple block containing a red 'change goal by 100' block, a blue 'clear screen' block, a red 'show number goal' block, and a blue 'pause (ms) 1000' block.
- on shake:** A purple block containing a red 'change step by 1' block, with a yellow note 'When Micro:bit shakes, increase the variable STEP by 1'.
- on button A pressed:** A purple block containing a blue 'show string step' block, with a yellow note 'When A is pressed show the current number of steps'.
- on button A+B pressed:** A purple block containing two red blocks: 'set step to 0' and 'set goal to 0', with a yellow note 'On A+B press reset the step variable to zero, and resets the goal to zero'.
- forever loop:** A blue 'forever' loop containing a purple 'plot bar graph of map step from low 0 high goal to low 0 high 9' block, a blue 'up to 9' block, and a blue 'pause (ms) 1000' block. A yellow note 'Create a bar graph based on the number of steps taken' is placed below the loop.

Shared code https://makecode.microbit.org/_09RYfwXz80C7

Picture view/Graph of steps to goal

The image displays a Scratch script for a Micro:bit project. The script is organized into several sections:

- on start:** A blue block containing a 'clear screen' block, followed by three 'set' blocks: 'set step to 0', 'set goal to 100', and 'set seconds to 0'. A yellow note next to it says 'Clear the screen Set steps to zero'.
- on button B pressed:** A purple block containing a 'change goal by 100' block, a 'clear screen' block, a 'show number goal' block, and a 'pause (ms) 1000' block. A yellow note next to it says 'Create a bar graph based on the number of steps taken'.
- on shake:** A purple block containing a 'change step by 1' block. A yellow note next to it says 'When Micro:bit shakes, increase the variable STEP by 1'.
- on button A pressed:** A purple block containing a 'show string step' block, a 'pause (ms) 1000' block, and a 'show number seconds' block. A yellow note next to it says 'When A is pressed show the current number of steps'.
- on button A+B pressed:** A purple block containing two 'set' blocks: 'set step to 0' and 'set goal to 0'. A yellow note next to it says 'On A+B press reset the step variable to zero, and resets the goal to zero'.
- forever loop (top):** A blue block containing a 'plot bar graph of step' block and an 'up to goal' block.
- forever loop (bottom):** A blue block containing a 'pause (ms) 1000' block and a 'change seconds by 1' block. A yellow note next to it says 'Count up by seconds'.
- Plot Bar Graph:** A detailed block at the bottom showing 'plot bar graph of map step from low 0 high goal to low 0 high 9 up to 9'.

Make Code Console Simulator

The image shows the MakeCode Micro:bit simulator interface. On the left is a virtual Micro:bit board with a grid of red LEDs and a 'SHAKE' button. The board is labeled with 'A', 'B', 'A+B', '0', '1', '2', '3V', and 'GND'. Below the board are control buttons for simulation (play, stop, refresh, undo, redo) and a 'Show console Simulator' button. The main area on the right displays a 'Simulator' window with a 'Go back' button and a 'Simulator' label with a pause button. A graph shows a blue line representing a value that increases from 4.05 to 4.05 over time. Below the graph is a console output window showing a list of values: 1.89, 2.52, 2.97, 3.51, 3.96, and 4.05.

micro:bit Home Share Blocks JavaScript Microsoft

Go back Simulator

SHAKE A B A+B 0 1 2 3V GND

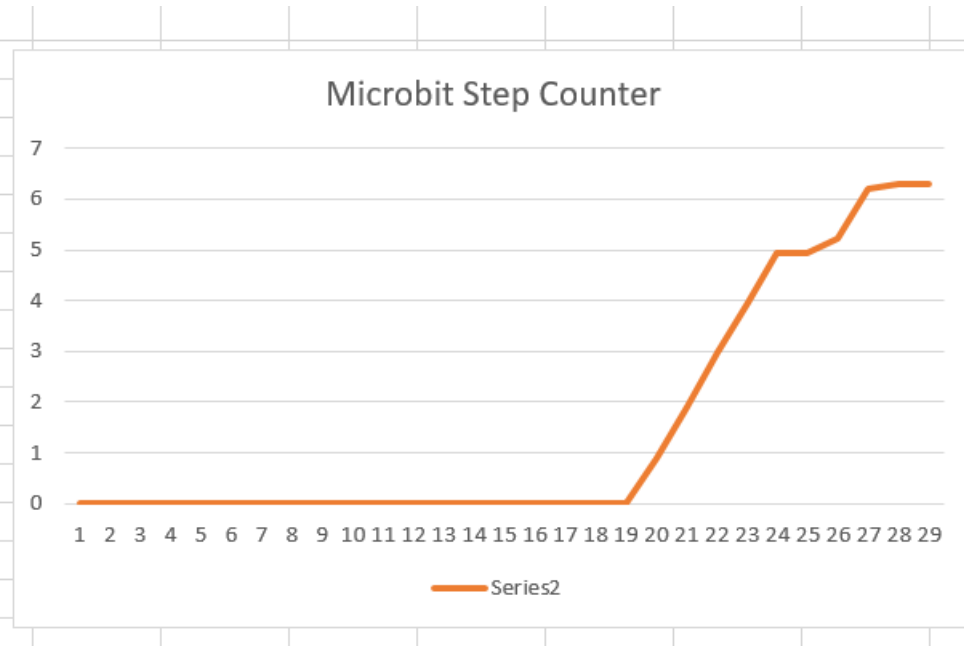
Show console Simulator

1.89
2.52
2.97
3.51
3.96
4.05

Sharing code https://makecode.microbit.org/_09RYfwXz80C7

Step Counter to Excel using MakeCode's Conssel Simulator

14	24.31	0
15	26.34	0
16	28.362	0
17	30.391	0
18	32.42	0
19	34.443	0
20	36.473	0.9
21	38.501	1.89
22	40.529	2.97
23	42.552	3.96
24	44.582	4.95
25	46.61	4.95
26	48.633	5.22
27	50.662	6.21
28	52.691	6.3
29	54.713	6.3
30		



When was the runner resting ?

When did the runner sprint ?

When did the person walk?

How do you know?

In progress – setting time periods to seconds and steps