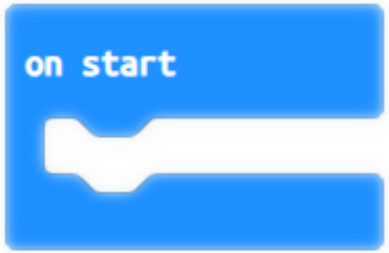
on start

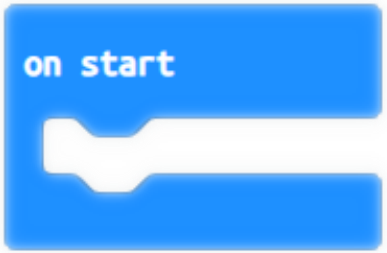
Start the code



Inclusive ER 01 micro:bit

on start

Runs to initialize the micro:bit



Used for initial settings (such as initializing values, clearing screen) and starting the program

forever

Continuously execute the code

Inclusive ER 02 micro:bit

forever

Continuously executes the set of commands placed inside the block

Used to continuously execute the main code we want the micro:bit to perform.

ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

Inspired by Natalie Rusk (MIT) created by IEES Lab DUTH

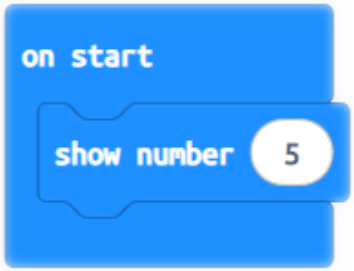
show number

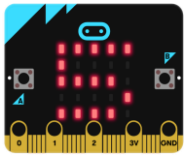
Display a number on the micro: bit's LED screen

Inclusive ER 03 micro:bit

show number

Moves on the screen any number we put inside the circle





If the number we put inside the circle has more than one digit, each digit is moved on the screen separately

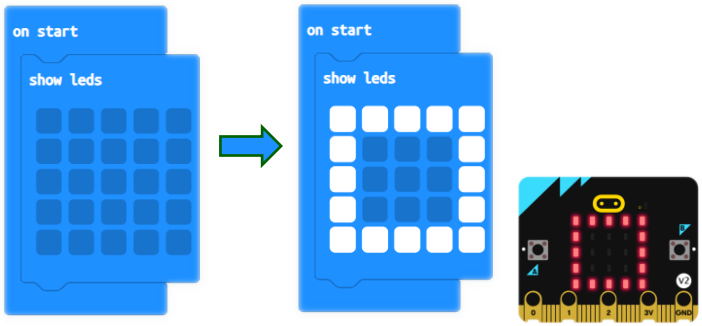
show leds

Display an image on the micro:bit's LED screen

Inclusive ER 04 micro:bit

show leds

Displays the image we want on the micro:bit screen



If, for example, we want a square to appear on the micro:bit screen, we select the appropriate LEDs in the block

ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

Inspired by Natalie Rusk (MIT) created by IEES Lab DUTH

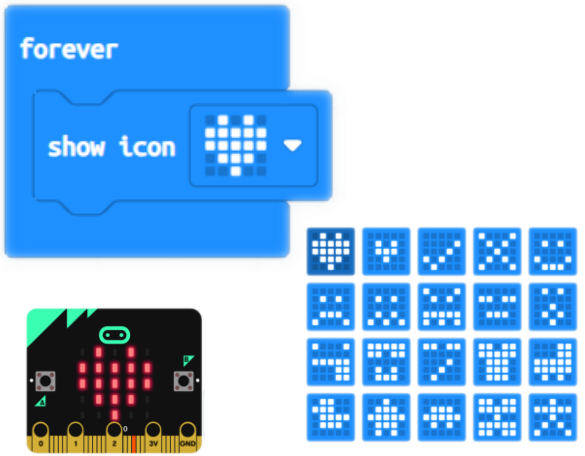
show icon

Display an icon on micro:bit's LED screen

Inclusive ER 05 micro:bit

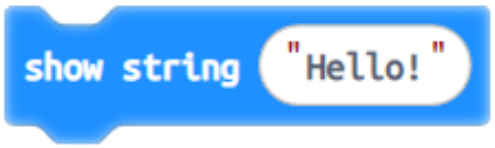
show icon

Displays the selected icon on the micro:bit LED screen



show string

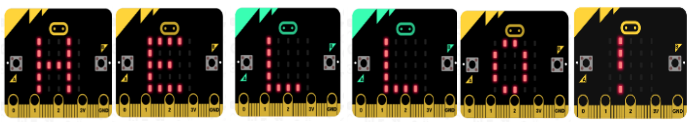
Display text on the micro:bit's LED screen



Inclusive ER 06 micro:bit

show string

Displays on the micro:bit screen the character we place inside the circle. If there are more than one character s, they appear on the screen one by one



ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

Inspired by Natalie Rusk (MIT) created by IEES Lab DUTH

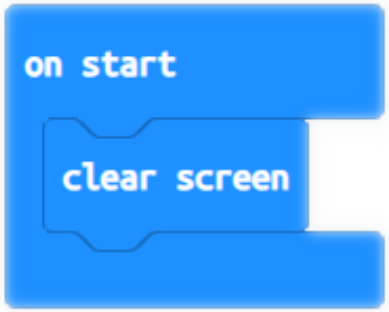
clear screen

Turn off all the LEDs on the micro:bit screen

Inclusive ER 07 micro:bit

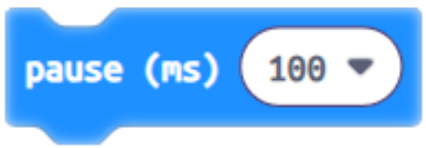
clear screen

Turns off all the LEDs from the micro:bit's screen. So, the screen is cleared of any code or graphics



pause (ms)

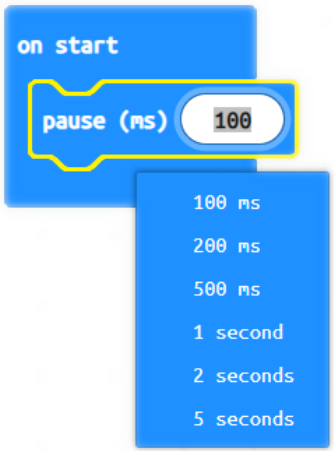
Pause the code by choosing a pause number



Inclusive ER 08 micro:bit

pause (ms)

Pauses the code for the time specified by the number inside the circle. Pause time is measured in milliseconds (ms)



ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

Inspired by Natalie Rusk (MIT) created by IEES Lab DUTH

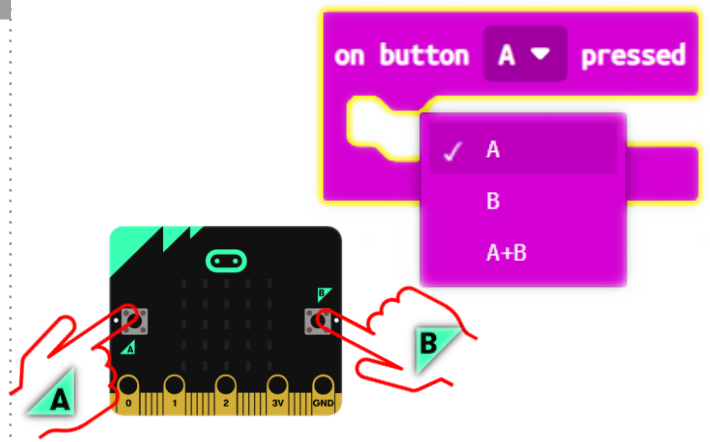
on button pressed

Execute the code by pressing A or B or A+B

Inclusive ER 09 micro:bit

on button pressed

Presses and releases the buttons A, B, A+B



When the A or B or A+B button is pressed and immediately released, the commands we have set are executed

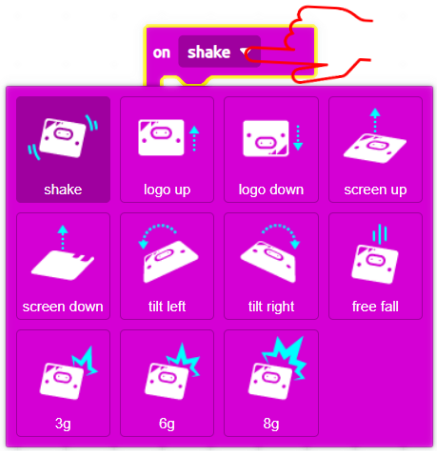
on

Detects an action on the micro:bit

Inclusive ER 10 micro:bit

on

Detects an action on the micro:bit



The action we want on the micro:bit is selected and then the commands we set are executed

ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ DEMOCRITUS UNIVERSITY OF THRACE

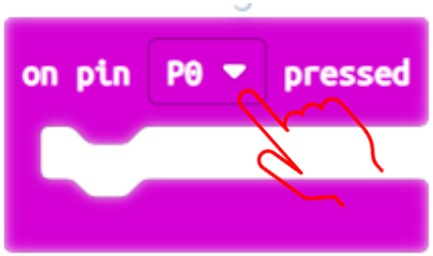
iEES Lab

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

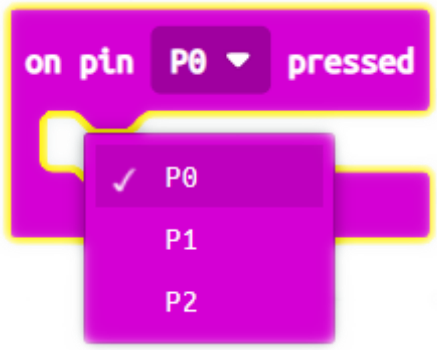
on pin pressed

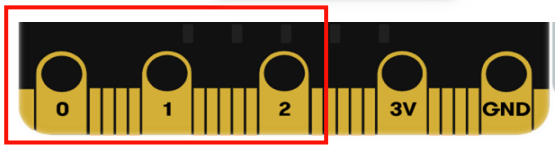
Press a pin on micro:bit



on pin ▽ pressed

The selected pin (P0, P1, P2) is pressed and released, executing the commands we have defined



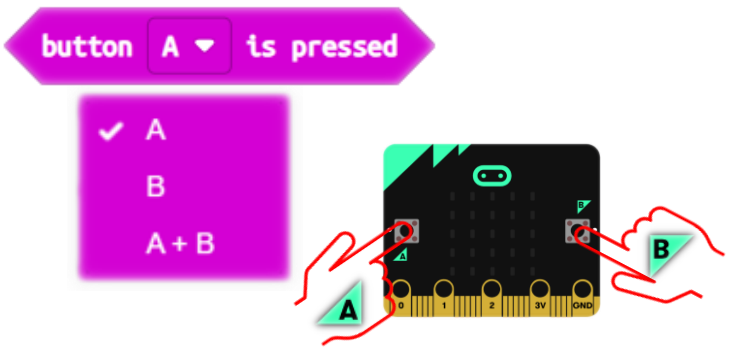


button is pressed

Continuously pressing a button on micro:bit

button ▽ is pressed

Continuously pressing a button without releasing it



If one of the micro:bit buttons (A or B) has been pressed or both buttons at the same time (A + B), it executes the commands we have set

ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

Inspired by Natalie Rusk (MIT) created by IEES Lab DUTH

light level

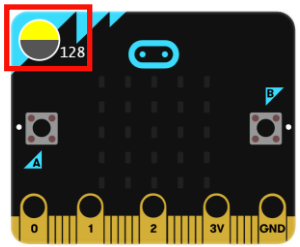
Find out how bright the place you are in is

Inclusive ER 13 micro:bit

light level

Finds the light level of a place (how bright or dark it is)

Light level 0 means a dark place and light level 255 means a place with intensive light



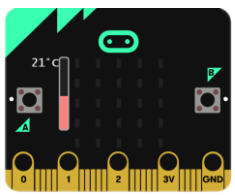
temperature (°C)

Receive the temperature of the place you are in

Inclusive ER 14 micro:bit

temperature (°C)

Receives the temperature of the place we are in (indoor or outdoor) and depicts it on the micro:bit. Temperature is measured in degrees Celsius (°C)



ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

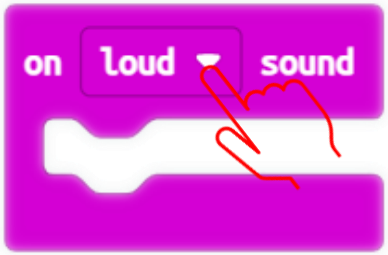
Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

Inspired by Natalie Rusk (MIT) created by IEES Lab DUTH

on sound

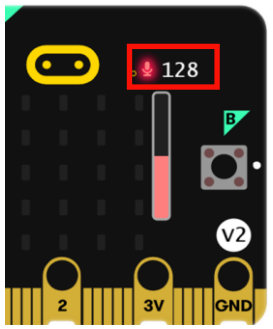
Select the volume that the micro:bit will detect



Inclusive ER 15 micro:bit

on ▽ sound

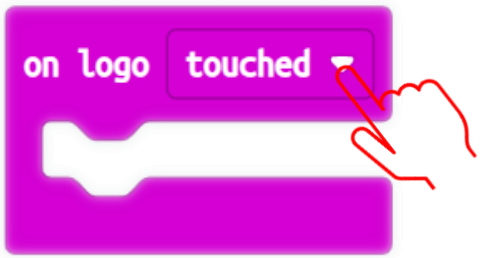
Enables the microphone on the micro:bit.
Works with micro:bit v2 only



The microphone detects quiet or loud sound and executes the commands we have set

on logo

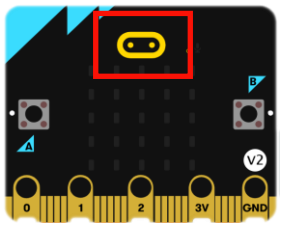
Select the action to detect the micro:bit logo and execute



Inclusive ER 16 micro:bit

on logo ▽

Enables the touch logo sensor on the micro:bit which acts like a touch button.
Works with micro:bit v2 only



The commands we want are executed when some action is detected on the touch logo sensor. Useful in touch-enabled environments (eg touch-screens)

ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

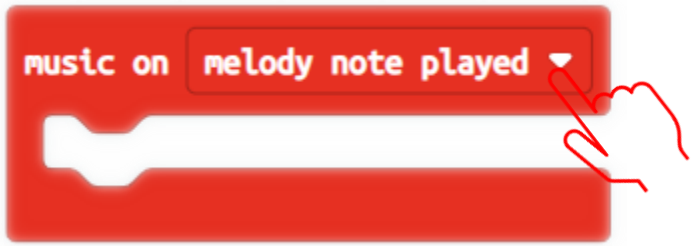
Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

Inspired by Natalie Rusk (MIT) created by IEES Lab DUTH

music on

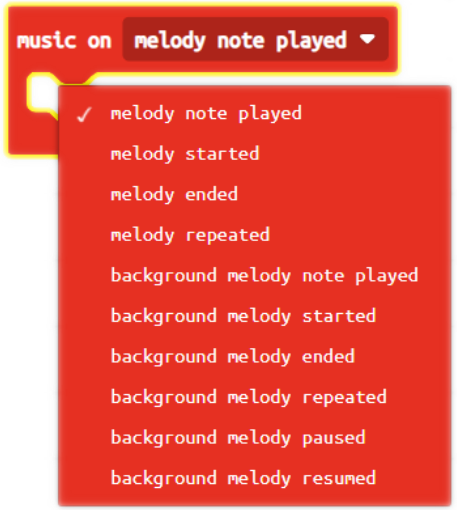
Select an action for the music tune



Inclusive ER 17 micro:bit

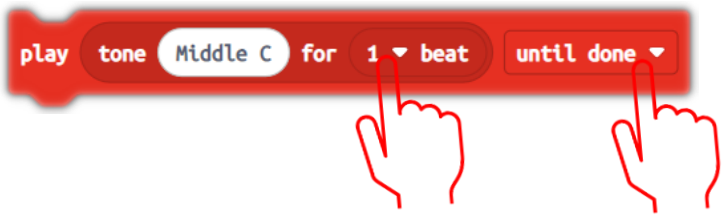
music on

Checks the action we have selected for the music tune and if it is valid, executes the code



play

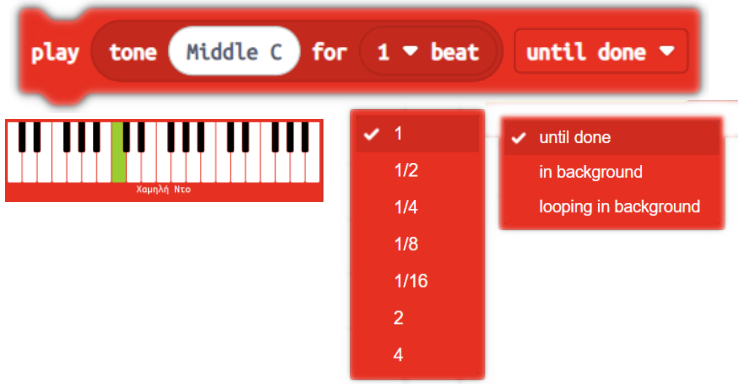
Play melody



Inclusive ER 18 micro:bit

play

Plays the sound we select from the piano in a specific beat (1, ½, ¼, …, 4) and in a specific mode



ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

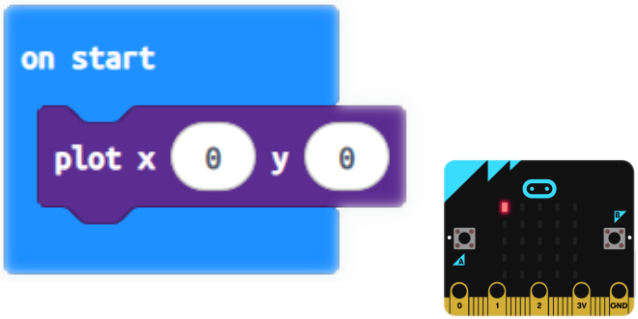
plot x y

Turn on a specific LED on the micro:bit's screen

Inclusive ER 19 micro:bit

plot x ◯ y ◯

Turns on a specific LED on the micro:bit screen. The x and y coordinates take values from 0 to 4



Example: At position x=0, y=0 the top left LED turns on. This is because the coordinates are increasing to the right for x and downward for y

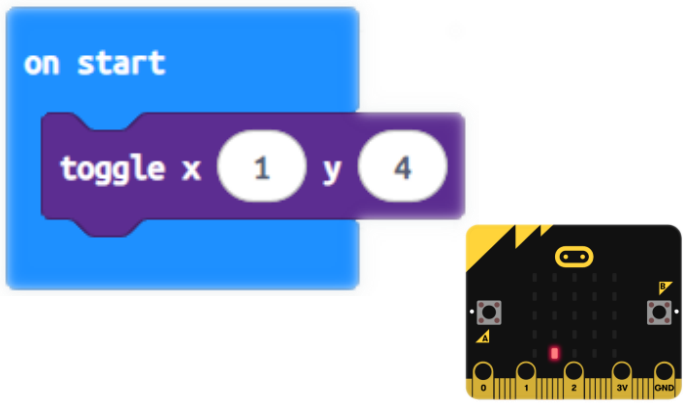
toggle x y

Toggle a specific LED on the micro:bit's screen

Inclusive ER 20 micro:bit

toggle x ◯ y ◯

Toggles a specific LED on the micro:bit's screen with the coordinates we have set for it



Example: At position x=1, y=4 toggles the specific LED shown in the picture

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

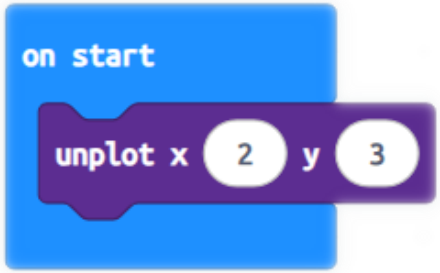
unplot x y

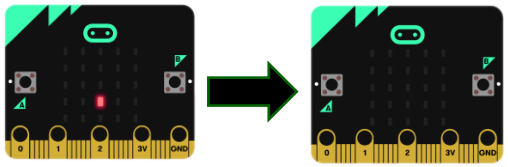
Turn off the LED on the micro:bit screen that is in a specific position

Inclusive ER 21 micro:bit

unplot x ◯ y ◯

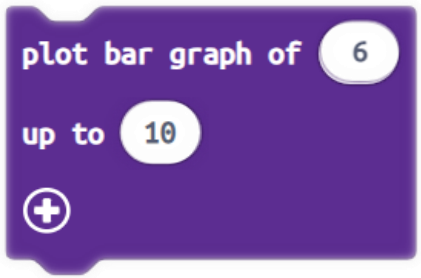
Turns off the LED at the specific location on the micro:bit's screen, according to the coordinates we have set





plot bar graph of up to

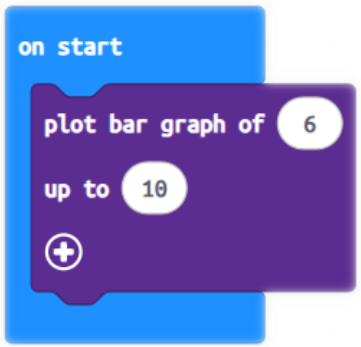
Display a bar graph on the micro:bit's screen

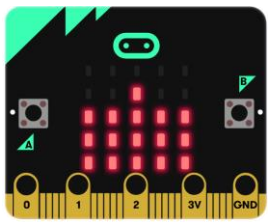


Inclusive ER 22 micro:bit

plot bar graph of ◯ up to ◯

Displays a bar graph on the micro:bit's screen according to a ratio





The micro:bit's LEDs are 25. For example, if the max value is 10 and the numeric value is 6, then 16 LEDs will be light up

ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

Inspired by Natalie Rusk (MIT) created by IEES Lab DUTH

repeat times do

Repeat the code execution

Inclusive ER 23 micro:bit

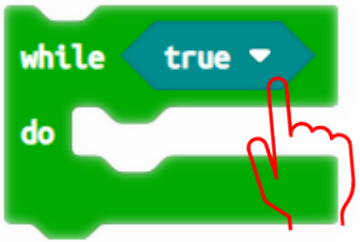
repeat ( ) times do

Repeats the sequence of commands we have defined in the «repeats times do» block

For example, the commands defined inside the block will be repeated four times

while do

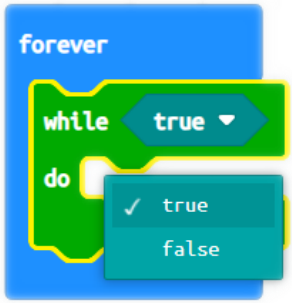
Repeat the code if the condition is valid



Inclusive ER 24 micro:bit

while ⬡ do

Repeats the sequence of commands over and over again as long as the condition we have set is valid (true or false)



The condition is checked before any code is executed. This means that if the condition we specified is not valid, the sequence of commands inside the condition is not executed

ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

Inspired by Natalie Rusk (MIT) created by IEES Lab DUTH

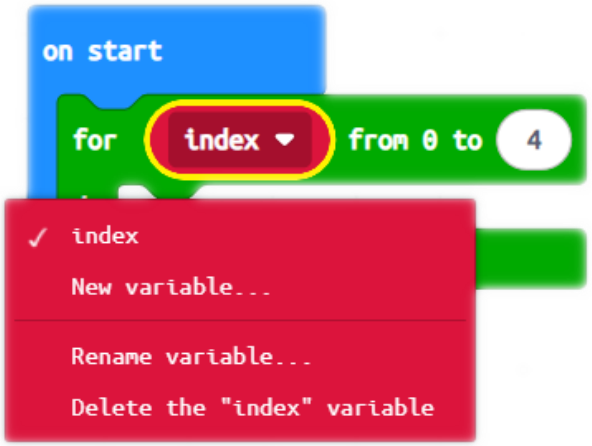
for from 0 to do

Execute an action for each value

Inclusive ER 25 micro:bit

for ▽ from 0 to ◯ do

Executes the commands we want for as many times as we have defined inside the white circle, using a variable that counts the repetitions



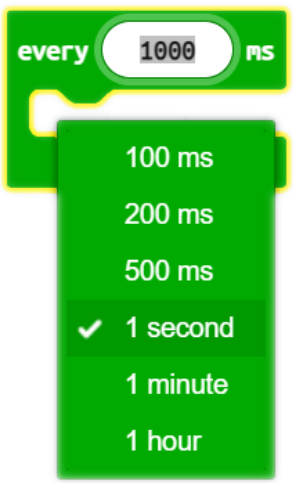
every ms

Execute the code for a specified time

Inclusive ER 26 micro:bit

every ▭ ms

Executes the commands we want over and over again for the time period we have set it



Similar to the "forever" block, except that there is an amount of time we set for it to wait before the commands are executed. Time is measured in milliseconds (ms)

ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

Inspired by Natalie Rusk (MIT) created by IEES Lab DUTH

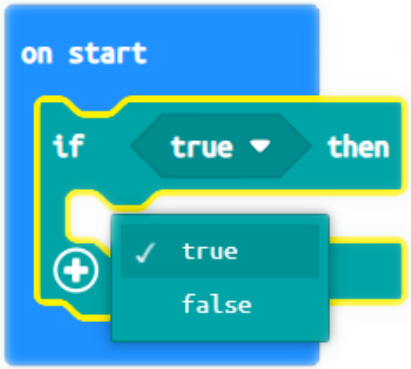
if then

Execute the code if the condition is valid

Inclusive ER 27 micro:bit

if ⬭ then

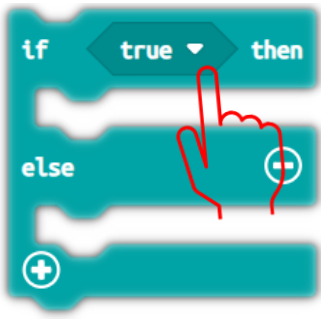
Executes the commands we have defined, depending on whether a condition is true or false



The commands are executed only if the condition we have defined inside the block is valid

If then, else

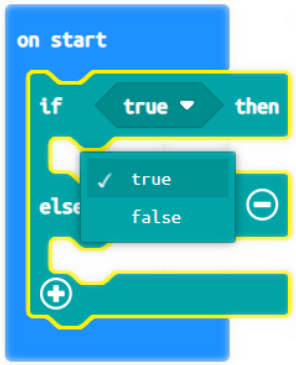
Execute the code if condition is valid, else execute other code



Inclusive ER 28 micro:bit

if ⬭ then, else

Executes the commands we have defined, depending on whether a condition is true or false



If the condition we define is valid, the commands inside the "if" block are executed. In case the condition is not valid, the commands defined in the "else" block are executed

ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

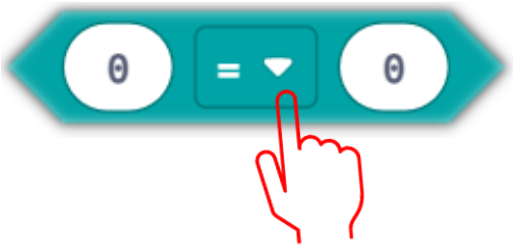
Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

Inspired by Natalie Rusk (MIT) created by IEES Lab DUTH

comparison

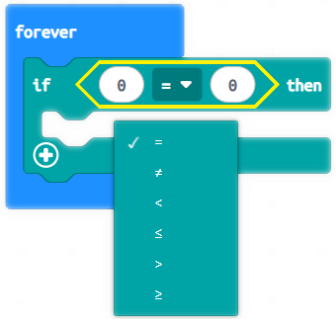
Check if the values are equal



Inclusive ER 29 micro:bit

◯ = ▽ ◯

Compares the values placed inside the circles and checks if these values are equal



In addition, it has extra comparison options: ≠ (different), < (less than), ≤ (less than or equal to), > (greater than), ≥ (greater than or equal to)

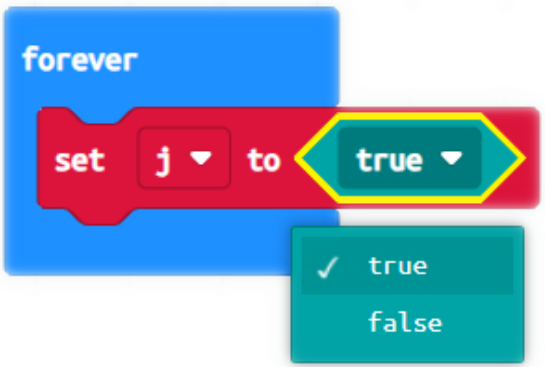
true

Set the condition true or false

Inclusive ER 30 micro:bit

true ▽

A value or condition can also be defined with a Boolean value (true or false). This Boolean value is checked and if it is valid, the commands we want are executed



ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ DEMOCRITUS UNIVERSITY OF THRACE

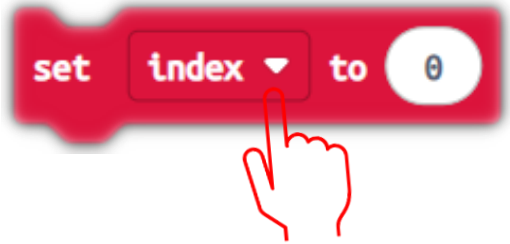
iEES Lab

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

set to

Set a variable



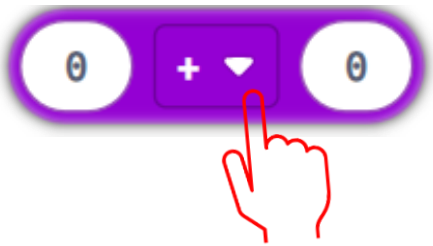
Inclusive ER 31 micro:bit

set ▽ to ○

The variable we want is created to store some values. We can create as many as we want, modify them accordingly, or delete them

+

Calculate the addition of two values

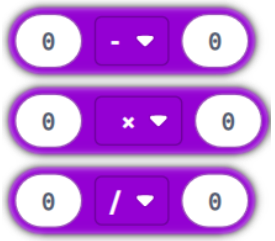


Inclusive ER 32 micro:bit

○ +▽ ○

Calculates the addition of two values inside the circles and executes the commands we want depending on the result

Accordingly, there is also the possibility of calculating the subtraction (-), the multiplication (*) and the division (/) of two values



Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

pick random to

Randomly pick a number

Inclusive ER 33 micro:bit

pick random ◯ to ◯

The code picks a random number that is between the smallest (min) and largest (max) number we set inside the circles. The selection includes both the minimum and maximum value. Depending on the number selected, the corresponding commands we have defined are executed

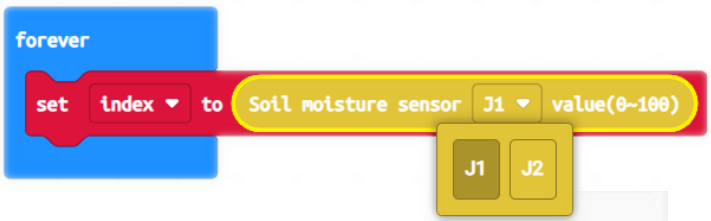
Soil moisture sensor value(0 ~100)

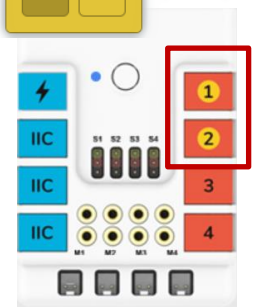
Read the soil moisture

Inclusive ER 34 micro:bit

Soil moisture sensor ▽ value(0 ~100)

Block from PLANETX extension. It measures the soil moisture value and stores it in the variable we defined before





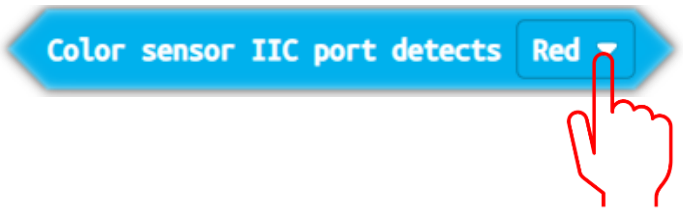
The soil moisture sensor is connected to a port (J1 or J2) of the Nezha expansion board

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

Color sensor IIC port detects

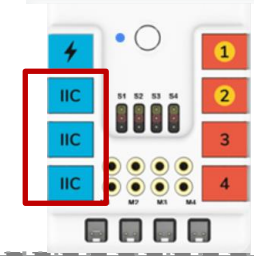
Detect color



Color sensor IIC port detects

Block from the PLANETX extension. It detects a color through a color sensor

The color sensor is connected to one of the three IIC (I^2C) ports of the Nezha expansion board. The desired color is selected and when the sensor detects it, the commands we want are executed



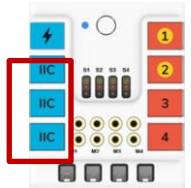
Gesture sensor IIC port is

Detect gesture

Gesture sensor IIC port is

Block from the PLANETX extension. It detects gesture through a gesture sensor

The gesture sensor is connected to one of the three IIC (I2C) ports of the Nezha expansion board, detecting various movements and executing the commands we want



ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE

iEES Lab

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line

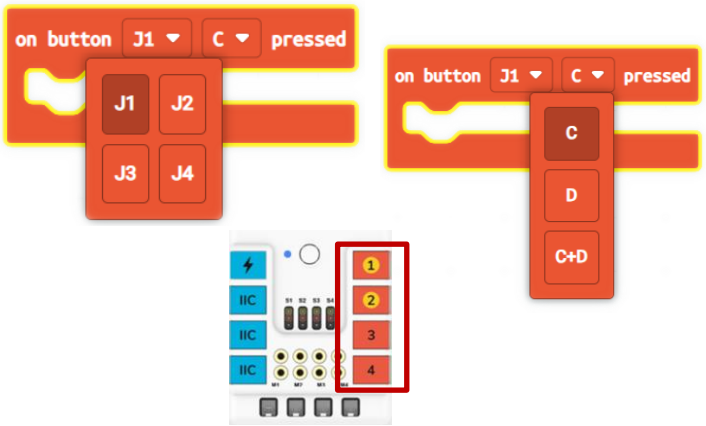
on button pressed

Press the button at the board position

Inclusive ER 37 micro:bit

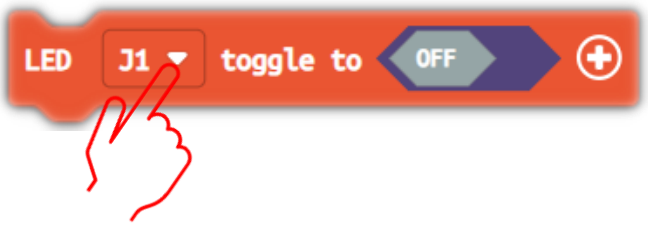
On button ▽ ▽ pressed

Block from the PLANETX extension. A button is connected to one of the ports (J1, J2, J3, J4) of the Nezha expansion board and the commands we want are executed when this button is pressed



LED toggle to

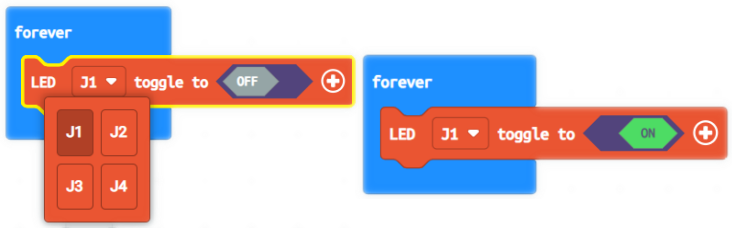
Turn on or off the connected LED

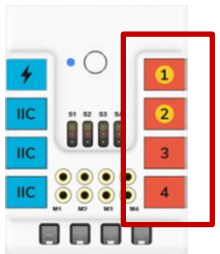


Inclusive ER 38 micro:bit

LED ▽ toggle to ⬡

Block from PLANETX extension





A LED is connected to one of the ports (J1, J2, J3, J4) on the Nezha expansion board and we choose whether to turn it on, off or blink. Then the commands we want are executed according to our choice

Make an iCard

1. Fold the card in half
2. Glue the backs together
3. Cut along the dashed line