

TITLE: What is a micro:bit?

LEARNING SCENARIO	
<i>School:</i>	<i>Duration (minutes):</i> 90
<i>Teacher:</i>	<i>Students age:</i> 10

<i>Essential Idea:</i>	What is a micro:bit?
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Topics:

- Pupils can solve more complex logical problems with and without technology.
- Step-by-step, conditional instructions and events are utilized in problem solving tasks.

Aims:

- Pupils design and program in a visual programming environment using input values.

Outcomes:

- Pupils describe the situations in their program in which the decision and input values should be used.

Work forms:

- individual work
- work in pairs

Methods:

- presentation
- discussion
- graphic work

ARTICULATION

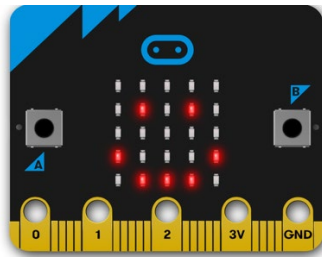
Course of action (duration, minutes)

INTRODUCTION

Teacher introduces a micro:bit and starts discussion:

What is a micro:bit?

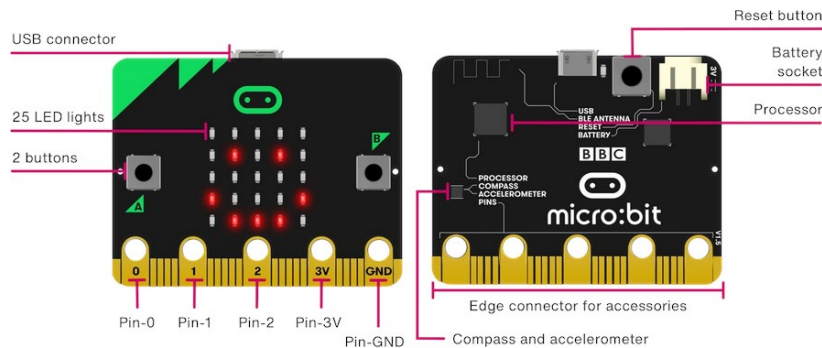
What can we do with a micro:bit?



MAIN PART

Teacher presents, explains:

BBC micro:bit is an educational device intended for simple learning of programming and electronics. It is easy to use and its users quickly learn the basics of programming and programming thinking.



The micro:bit screen consists of 25 LEDs that are used to display the results in real time. We use the programmable keys, buttons A and B, and their combination, A + B (simultaneous pressure) to display the results and control the device.

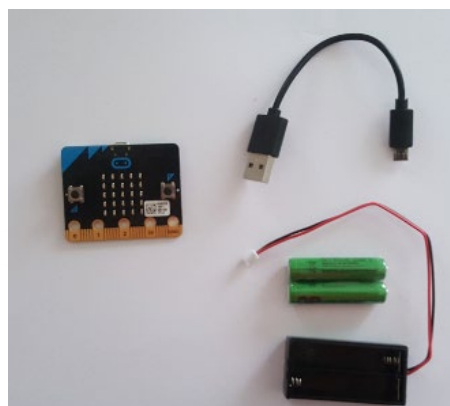
On the back of the device we have the RESET button with which we can restart the micro:bit device.

The 32-bit ARM Cortex processor with the speed of 16 MHz is powerful enough for even the most demanding users.

The micro:bit device has a built-in bluetooth module as well as a compass and an accelerometer.

Connecting a micro:bit device to a computer

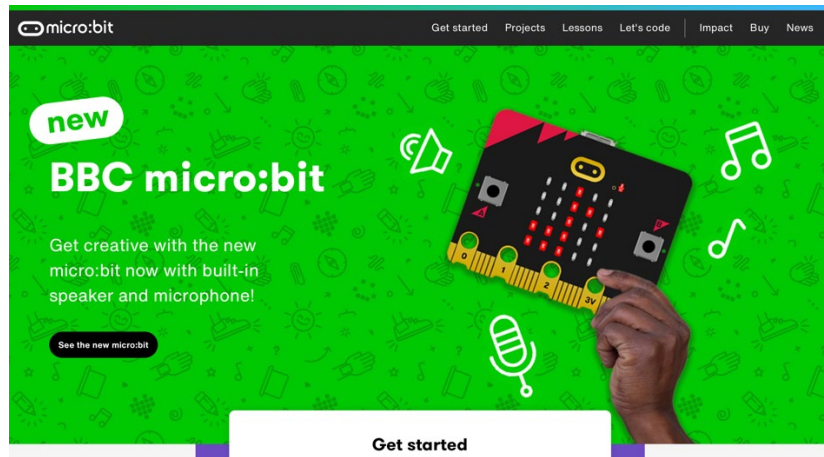
The micro:bit device comes in a package with a micro USB cable, two AAA batteries and a battery case, which can be seen in the picture.



By connecting a micro USB cable to a computer and a micro:bit device, the device will light up and display a welcome message.

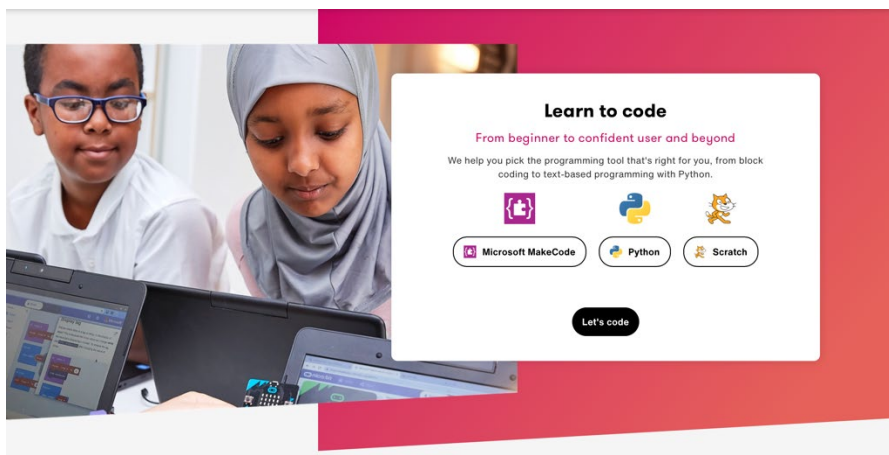
We use battery power if the device is not connected to a computer. The connection of micro:bit and battery power is done using the JST connector.

The official web page: <https://microbit.org>



We can programming a micro:bit by:

- MakeCode: <https://makecode.microbit.org>
- Scratch: <https://scratch.mit.edu/microbit>
- Python: <https://python.microbit.org/v/2.0>



The first steps:

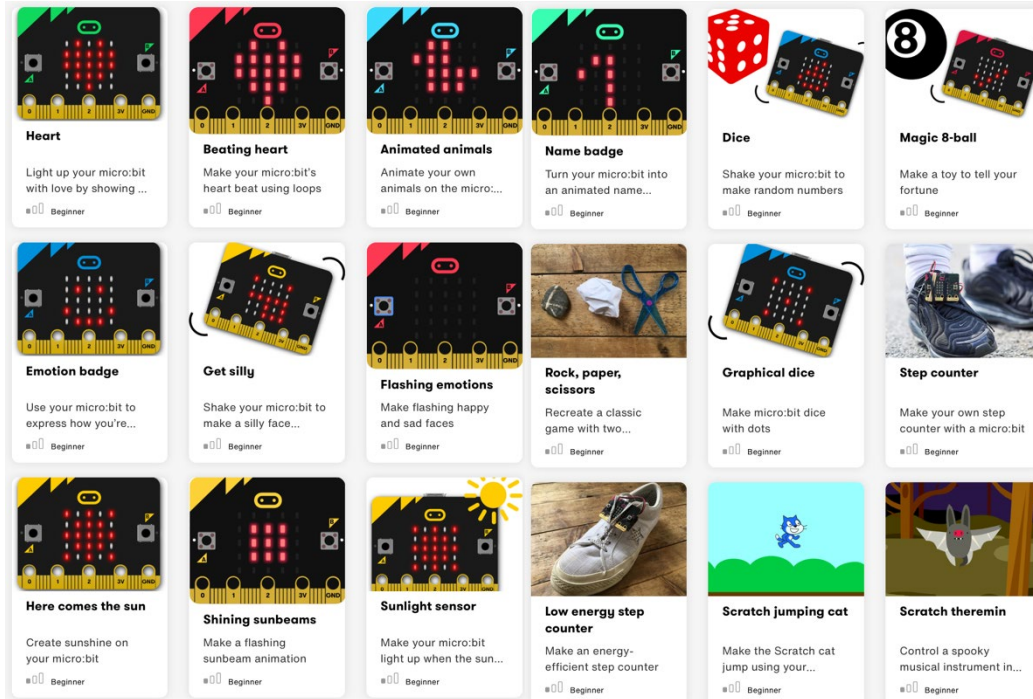
<https://microbit.org/get-started/first-steps/set-up/>

Teacher explores and chooses activities for pupils by using MakeCode:

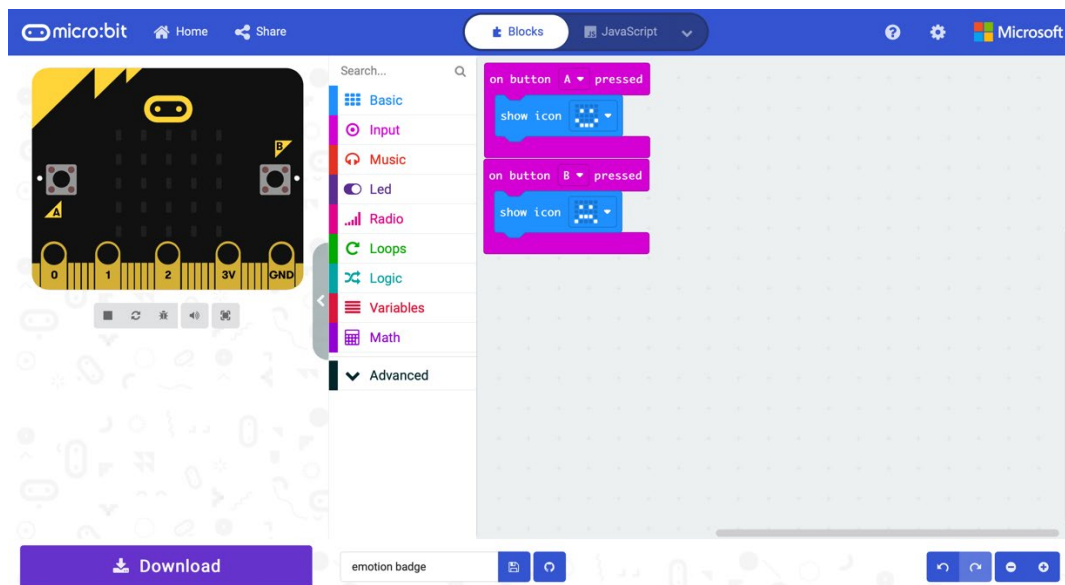
<https://microbit.org/projects/make-it-code-it/>

For example:

Emotion badge, Animated animals, Name badge, Dice, Sunshine sensor, etc.

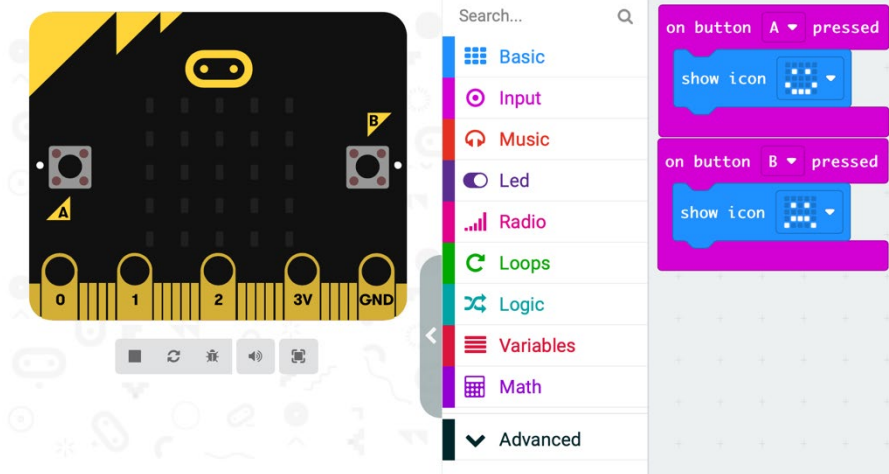


Teacher introduces the MakeCode working space and ways to work on it: how to create a program, how to save the program, how to download program to the micro:bit.

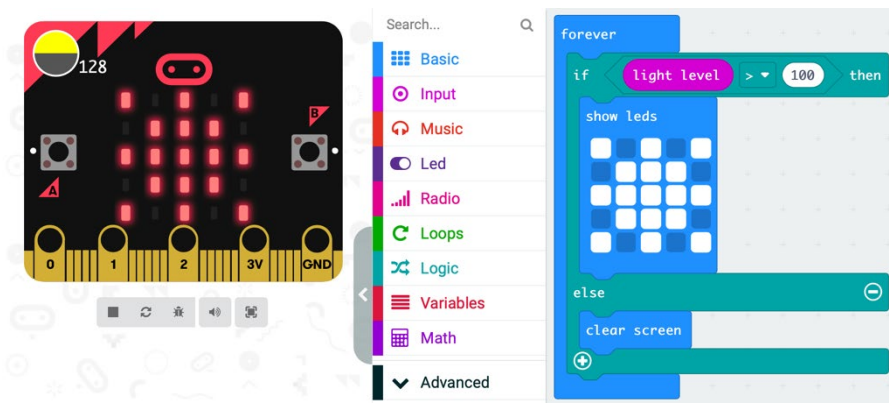


Pupils solve tasks and present their solutions.

For example Emotion badge:



Sunlight sensor:



Pupils and teachers discuss and evaluate the presented solutions.

CONCLUSION

To successfully complete the task, it is necessary to set the steps in the correct order.

Teacher controls and evaluates the pupils solutions to the tasks.

Together they repeat the strategy they used in solving today's tasks.

Methods

Work forms

presentation	interview	individual work
disussion	demonstration	work in pairs
work on the text	role playing	group work
graphic work		frontal work
interactive exercise /simulation on the computer		

Material:

- micro:bit
- <https://microbit.org/>
- <https://makecode.microbit.org>

Literature

- <https://microbit.org/projects/make-it-code-it/?filters=scratch>
- <https://makecode.microbit.org>
- <https://scratch.mit.edu/microbit>
- <https://python.microbit.org/v/2.0>
- <https://www.e-sfera.hr/prelistaj-udzbenik/46eb0ba9-475b-4d5f-ab77-a264ae54f6a7>

PERSONAL OBSERVATIONS, COMMENTS AND NOTES