

micro:bit Exploration

Intro to Programming with micro:bit

Corresponding Material

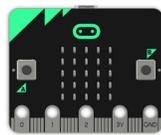
1.1- Intro to micro:bit

Discussion

Welcome to Physical Computing with micro:bit! In the coming lessons, you'll learn how to communicate with the computer in a language called JavaScript. We'll start by exploring and experimenting with programs and commands in the MakeCode editor.

Needed Materials

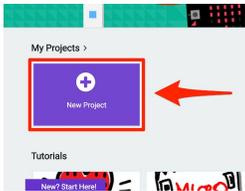
(1) Micro:bit



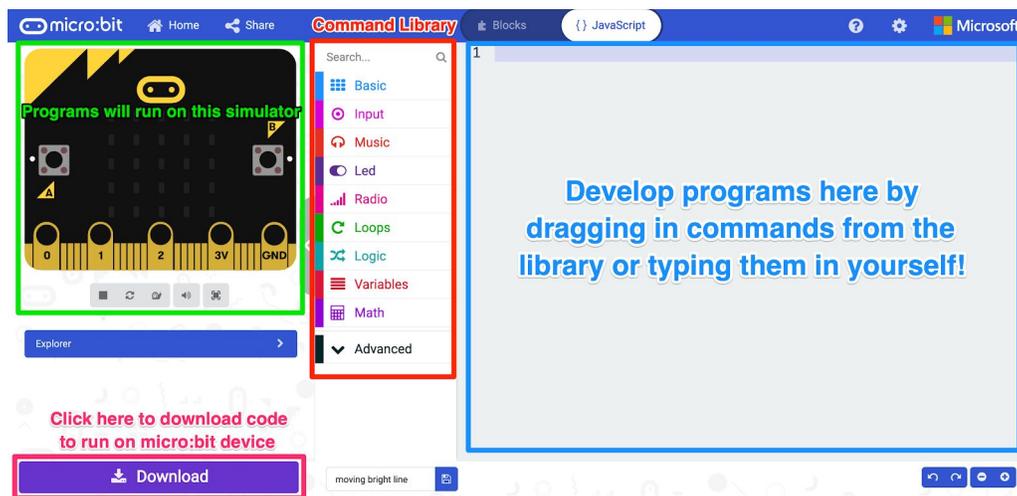
(1) USB cord



Class Exercise



1. Head to [MakeCode.microbit.org](https://makecode.microbit.org)
2. Click on *New Project* (shown in the image to the left)
3. Click on *JavaScript* to switch from block to text coding.
4. Develop programs by dragging commands from the center library or by typing them into the editor yourself.
5. Test programs on the online simulator or run them to your micro:bit device by clicking the *Download* button.



Code #1: Explore the `showNumber` command

Remove any commands shown in the editor and type in the following code. (Make sure to type the text *exactly* as you see it, paying close attention to capitalization and punctuation.)

```
1 basic.showNumber(0)
2
```

Download the code to your micro:bit or run on the simulator and answer the following questions.

1) What do you see when you run the code on your micro:bit?

2) What do you think will happen if you change the number inside the parentheses to 10?

Go into the code editor and replace the 0 with a 10. Download this code to your micro:bit or run on the simulator.

```
1 basic.showNumber(10)
2
```

3) Was your hypothesis correct? What happened when you ran the code?

4) Write a generic statement about how numbers show up on the micro:bit screen based on the number of digits in the number. Be as specific as possible.

Go into the code editor and replace the 10 with a 2020. Download this code to your micro:bit or run on the simulator.

```
1 basic.showNumber(2020)
2
```

5) Was the generic statement you made correct? How can you tell?

Go into the code editor and replace the 2020 with your name. Try to run your program on the simulator.

```
1 basic.showNumber(Kare1)
2
```

6) What happened when you tried to run the code?

Go into the code editor and replace your name with `2.5`. Try to run your program on the simulator.

```
1 basic.showNumber(2.5)
2
```

7) What happened when you tried to run the code?

8) Write a generic statement that describes the type of element that can be entered into the `showNumber` command. Be as specific as possible.

Code #2: Explore the `showString` command

Type the following code into your code editor.

```
1 basic.showString("Hello!")
2
```

Download the code to your micro:bit and answer the following questions.

1) What do you see when you run the code on your micro:bit?

2) What do you think will happen if you remove the quotation marks around the text `Hello!?`

Go into the code editor and remove the quotation marks around the word `Hello!`. Try to run your program on the simulator.

```
1 basic.showString(Hello!)
2
```

3) Was your hypothesis correct? What happened when you tried to run the code?

Go into the code editor and type `"8"` inside the parentheses. Download this code to your micro:bit or run on the simulator.

```
1 basic.showString("8")
2
```

4) What happened when you ran the code?

Go into the code editor and type `"2.5"` inside the parentheses. Download this code to your micro:bit or run on the simulator.

```
1 basic.showString("2.5")
2
```

5) Write a generic statement that describes the type of element that can be entered into the `showString` command and how it shows on the screen. Be as specific as possible.

Conclusion Questions

1. How are the `showString` and `showNumber` commands different?

2. How are the `showString` and `showNumber` commands similar?