Using the micro:bit with Scratch

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Scratch

The micro:bit extension for scratch allows you to connect wirelessly with the micro:bit. There are a couple of steps to set this up and then you can use the blocks in all sorts of programs.

Ensure your device is capable of running the Scratch app: **Windows 10 1709+, macOS 10.13+/11 (currently not supported on macOS 12) , Chrome OS or Android 6.0+**

For Windows and Mac OS you will also need to be running **Bluetooth 4.0** and you will need to **be online for Scratch Link to connect**

To check your Bluetooth version:

On Mac

1. Click the menu.
2. Select **About This Mac**.
3. Click on the **More Info...** button.
4. Click on the **System Report...** button.
5. Select **Bluetooth** from the sidebar on the left, underneath "Hardware."
6. Scan down the list of information until you find "LMP Version."

If your Mac is equipped with Bluetooth 4.0, LMP Version will say 0x6. Anything lower than that is an older version of Bluetooth.

On Windows

1. Right-click the Start button to open its context menu. Select the item called **Device Manager**.
2. In Device Manager, expand the Bluetooth node.
3. If your PC supports Bluetooth 4.0, you will see the item named **Bluetooth LE Enumerator***

*****If Bluetooth is not listed at all within Device Manager and you are using a Bluetooth dongle eg to connect a wireless mouse, you may need to disconnect the dongle in order for the micro:bit to be visible to

1. Install **Scratch Link** (https://scratch.mit.edu/microbit) for Mac/Windows or the **app for Chrome OS and Android** (https://play.google.com/store/apps/details?id=org.scratch) tablets

2. Download and unzip the **micro:bit Scratch Hex file** (https://downloads.scratch.mit.edu/microbit/scratch-microbit.hex.zip).

3. Flash the micro:bit over USB with the Scratch .Hex File, you will see the five-character name of the micro:bit scroll across the screen eg 'zutiz'.

0:00 / 0:04

4. Connect to the micro:bit in the **Scratch editor** (https://scratch.mit.edu/projects/editor/) or app

Here's a demonstration of how to do this

0:00 / 1:04

Once you're set-up, you can then try out these **Scratch cards for micro:bit** (https://microbit.org/scratch/)

Troubleshooting

- If you are using Scratch Link on a PC, you should start this program first before loading the Scratch web interface.

- If you find that your micro:bit appears to be paired with your computer but is not showing up on scratch, it may be due to the computer attempting to use a previous pairing request.

  Remove any previous pairings you have on the computer. Each time the micro:bit is programmed via USB it erases any previous information on pairing. However, the computer often remembers previous parings to micro:bits and tries to re-establish them. As such you will need to initiate a fresh pairing each time.

- If you are using a proxy server within a school environment, you may need to exclude the scratch link URL and port from using the proxy `http://device-manager.scratch.mit.edu:20110/` (http://device-manager.scratch.mit.edu:20110/)

  This is set on the client and not the firewall or proxy.
  How to set up an exclusion depends on how the machine's proxy settings have been configured in the first place. This is often done through Windows Group Policy, but may instead be done through a WPAD or PAC file or configured manually on each workstation. (Source: Opendium)

Other ways to interact with Scratch and micro:bit

Scratch to micro:bit bridge

You can use the scratch to micro:bit bridge, developed by MrYslab:
https://github.com/MrYsLab/s2m (https://github.com/MrYsLab/s2m)

Bluetooth

You can use the S2Bot App plug-in with Scratch, which allows any compatible BLE controller to interact directly with Scratch project:
http://www.picaxe.com/BBC-microbit/ (http://www.picaxe.com/BBC-microbit/)

Additional Information

https://github.com/carlosperate/awesome-microbit/blob/master/README.md#scratch-extensions
(https://github.com/carlosperate/awesome-microbit/blob/master/README.md#scratch-extensions)

Scratch FAQ (https://scratch.mit.edu/info/faq/#schools)