

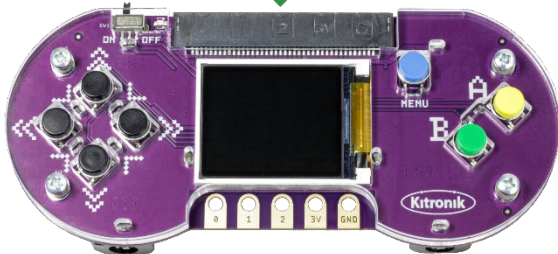
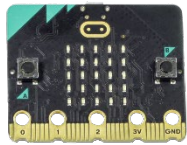
Arcade for Micro:bit

Datasheet and Technology Specification.

Introduction: The Kitronik Arcade for micro:bit is a handheld gaming platform that's designed to elevate the functionality of your latest BBC micro:bit, by letting you write fun and educational games using the Microsoft MakeCode Arcade game editor.

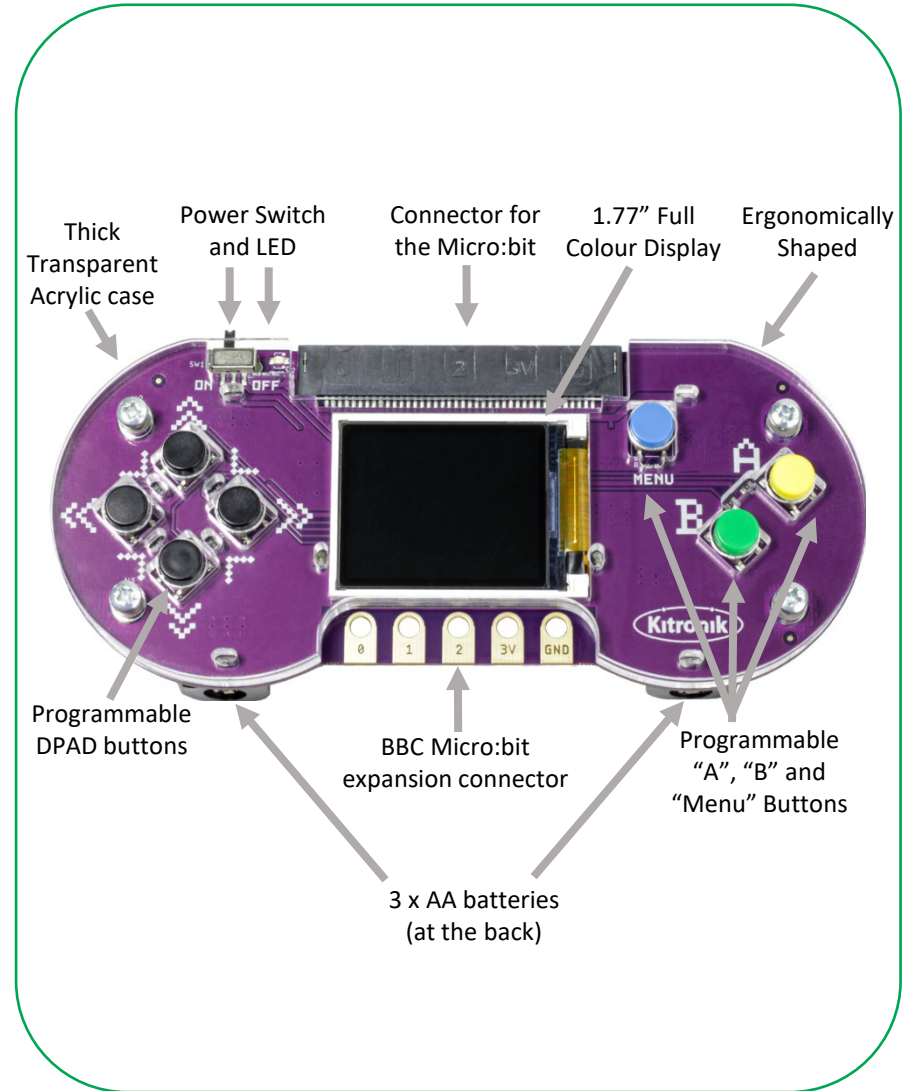
The MakeCode Arcade game editor can be found at: <https://arcade.makecode.com/>

The latest version of the BBC micro:bit is inserted into the connector at the top of the arcade as shown below. No soldering, screws or tools are required at all!



Features: The Arcade for micro:bit features a full colour 1.77" LCD screen, seven fully programmable buttons – a directional pad, A and B buttons, and a menu button – and an expansion connector directly from the micro:bit. All contained within a tough transparent acrylic case.

Processing power, game storage and audio feedback is provided by the latest revision of the micro:bit; whilst electrical power to the arcade is provided by three AA sized batteries inserted into the back of the arcade. A micro:bit will need to be plugged in to complete the circuit.



MakeCode Arcade Editor

If you are familiar with the MakeCode editor for the BBC micro:bit, this will feel very similar. For first time coders, the editor give a simple drag and down interface to create code. The Arcade editor can be found at: <https://arcade.makecode.com/> which has additional step-by-step tutorials created to follow to create fun playable games.

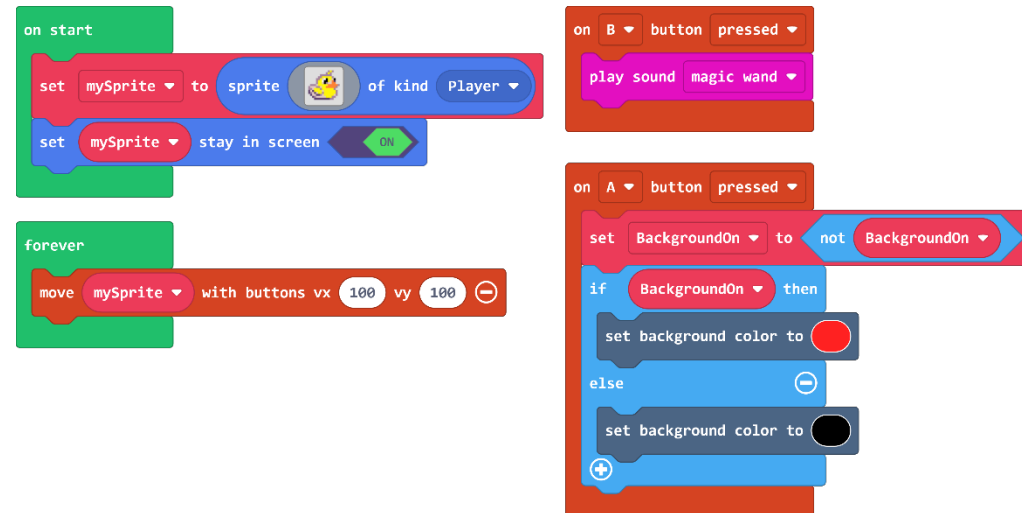
The home page of the editor (above link) has example games and tutorials listed. Under the “My Projects” section, there is also “New Project” button which is used for creating new code. Once clicked on, it will ask to enter a name for your project. These project will also be listed in the “My Projects” section when returning to the home page.

This example code will help get you started with some basic interactions with the Arcade board and the software.

The “onStart” bracket, sets up the Sprite (character on screen). The “set mySprite” block allows you to select what type of character to be shown. In this example a duck is being used. The next block makes sure that the Sprite stays on screen and does not go off and can not be seen. The “forever” bracket has a single block to allow the Sprite to move around the screen.

On Button A press bracket set a variable called ‘BackgroundOn’ to be either logic True or False. The if statement after checks for this True or False state and sets the background colour to red when the variable is set to True, and black when set to False.

Pressing Button B plays a sound onto the BBC micro:bit buzzer.



Programming the Micro:bit Arcade

First time Power On:

As the micro:bit is separate to the Arcade for micro:bit, the first time you plug a micro:bit into the arcade – nothing will happen! This is because the micro:bit will not be running any software that knows how to properly talk to the Arcade for micro:bit hardware.

We suggest that you leave the micro:bit disconnected from your arcade when you copy a game file over to the Arcade, as there is the chance that the micro:bit could be running code for a completely different project that might cause the arcade to act erratically.

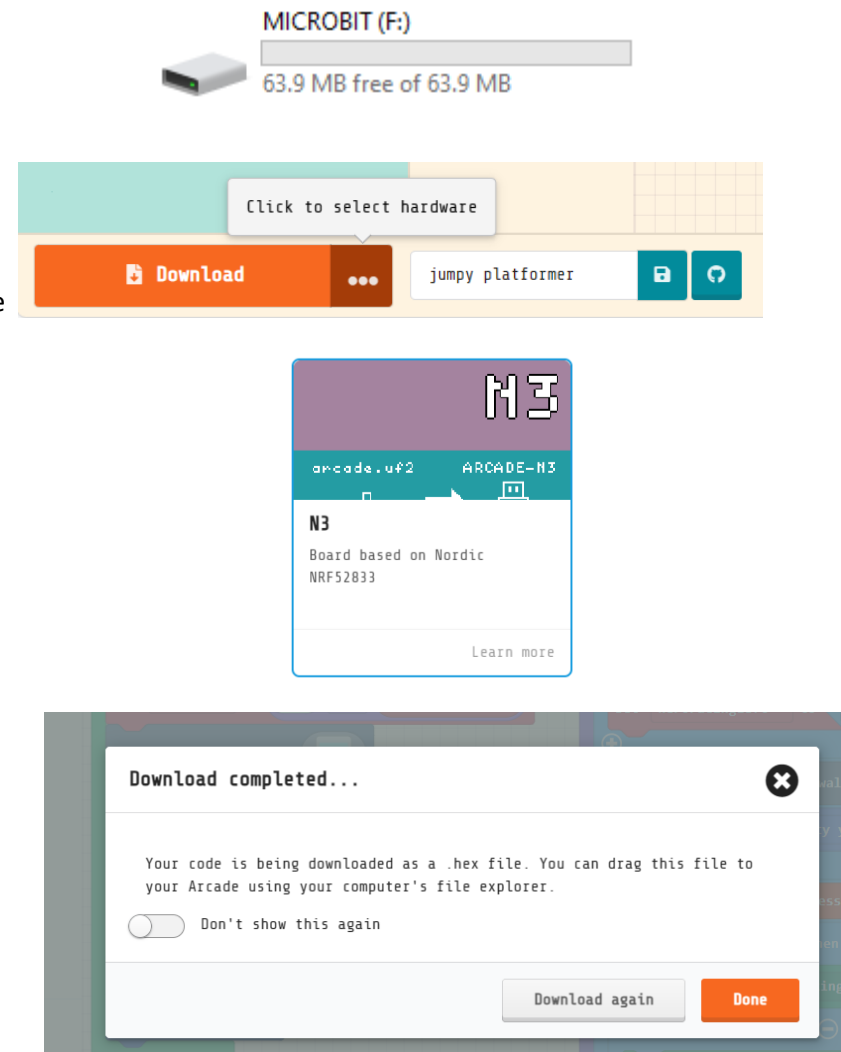
NOTE – Be Careful When Handling The Micro:Bit, As It Is a Static Sensitive Device

Please see this link for more details:

<https://microbit.org/get-started/user-guide/electrical-product-guidance/>

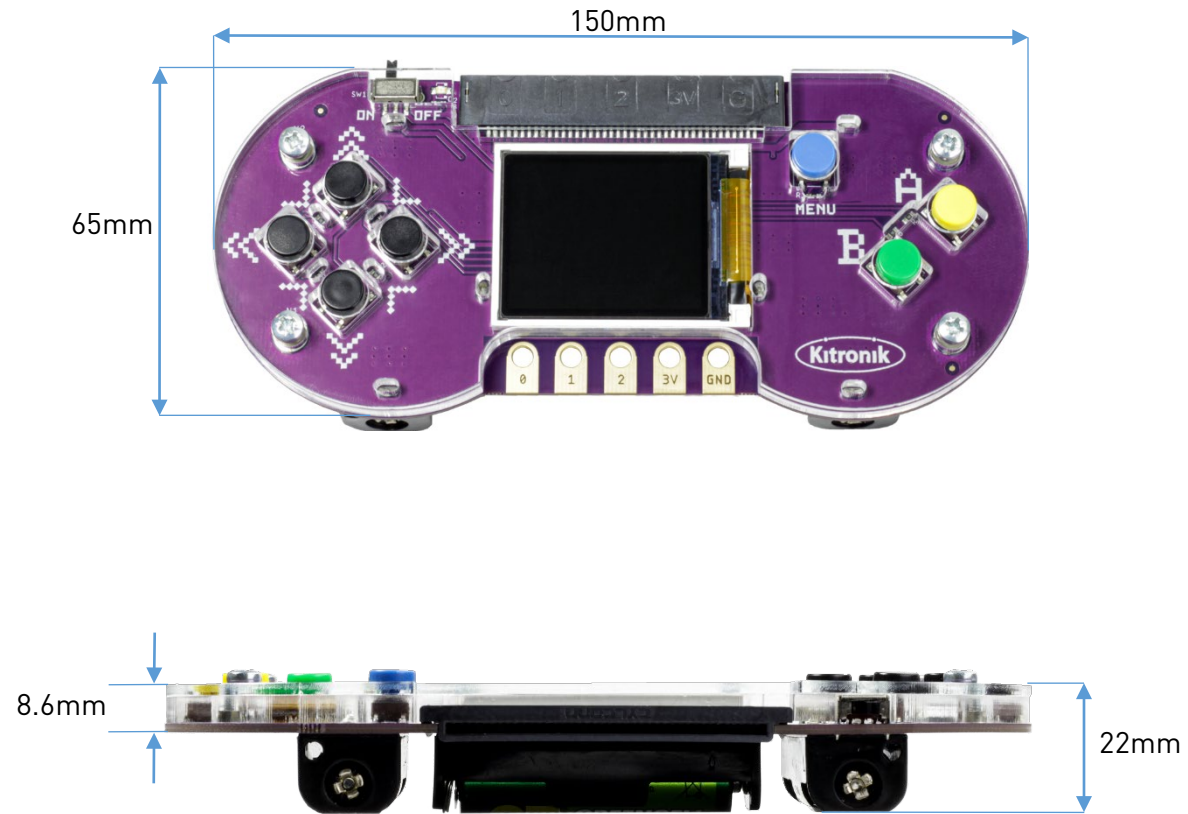
Copying games to the Arcade for micro:bit:

1. Plug the micro:bit into your computer by a micro USB cable. It will show up as a USB drive as “MICROBIT” in your file explorer.
2. Once you have written your MakeCode Arcade game, you need to first select the hardware you are using. Press the ellipses by the download button, and navigate to the “select hardware” screen. Then press either the “N3” or “Kitronik Arcade for Micro:bit” option.
3. At this point you can then press the “download” button, which will download a .hex file to your computer. Simply copy that file to the “MICROBIT” drive.
4. Disconnect the micro:bit from your computer and insert the micro:bit into the arcade. Make sure you have fresh batteries installed before you slide the power switch on.
5. Have fun!



The image shows a sequence of three screenshots from the MakeCode Arcade web interface. The top screenshot shows a USB drive named "MICROBIT (F:)" with 63.9 MB free of 63.9 MB. Below it is the MakeCode Arcade interface with a "Download" button and a dropdown menu showing "jumpy platformer". A tooltip says "Click to select hardware". The middle screenshot shows the "select hardware" screen with "N3" selected. The bottom screenshot shows a "Download completed..." dialog box with instructions to drag the .hex file to the arcade and a "Done" button.

Dimensions



(Dimensions +/- 0.8mm)

Electrical Information

Processor	BBC micro:bit (V2 and above only)
Battery Operating voltage (VCC)	3 x AA batteries – Alkaline or NiMH/NiCad (3.6-4.5V)
LCD screen resolution	160 x 128
LCD screen size	1.77 inch (diagonal)
Typical Current Draw	80mA (Approx. - depending on use)
Typical Battery life (based on 3xAA Alkaline batteries)	20 hours (Approx. - depending on use)

Important Information:

At the time of writing, the Arcade for Micro:bit requires a “V2” Micro:bit to operate. The V1 version of the micro:bit does not contain enough memory or storage to run the Arcade games.