

Live vs. Arduino Modes - mDesigner/Scratch 3.0

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Introduction

Microduino's mDesigner has two modes for deploying your Scratch project's script;

Live Mode

Arduino Mode

Live Mode

Live Mode is a mode in which a special program (firmware) is uploaded onto the Core module. This firmware is designed to receive and perform commands directly from mDesigner over USB running on your computer. This means, in order to run your Script you will need to have your project connected to your computer.

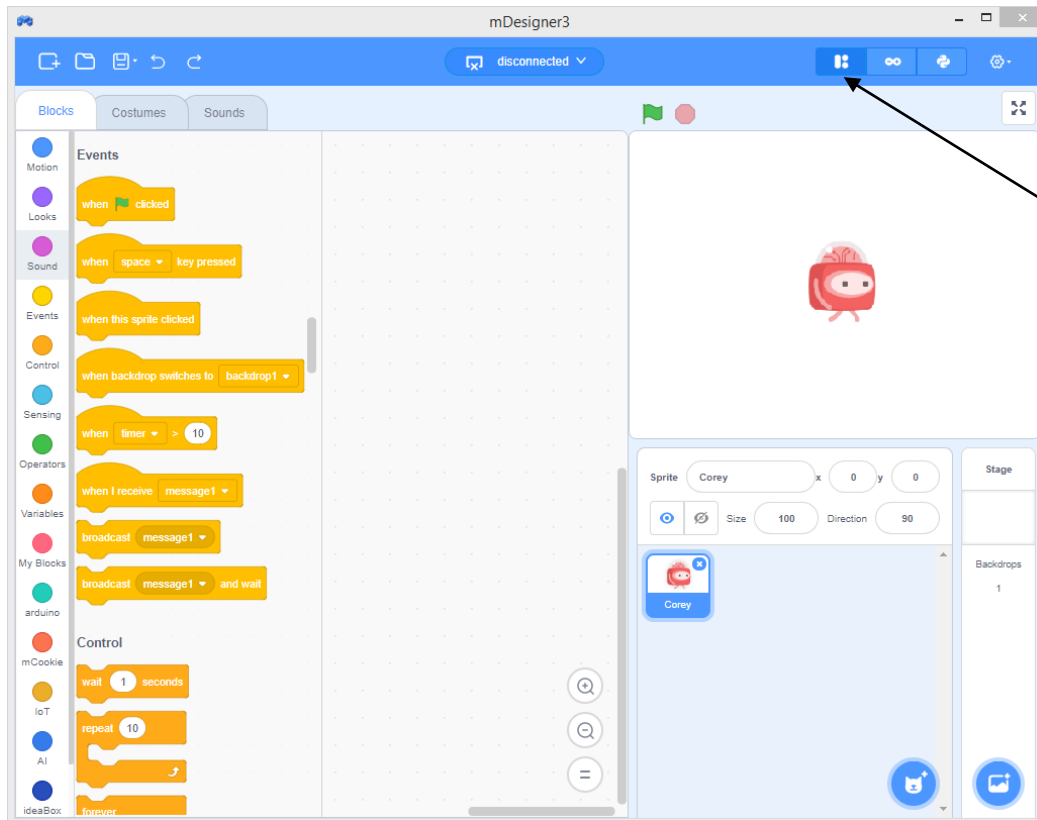


Computer send or receives commands with mCenter+ or mBattery over USB.

mCenter+ or mBattery acts as a communication bridge with the Computer and the Core module.

Core module receives or sends commands with mCenter+ or mBattery.

Live Mode Location



Click here for Live Mode

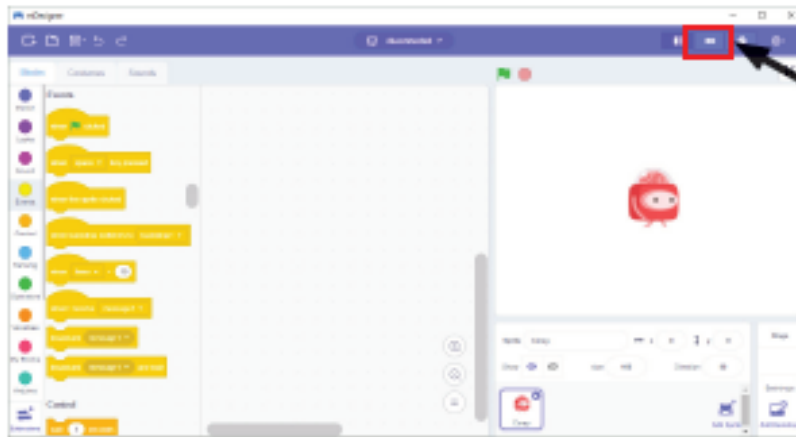
Arduino Mode

Arduino Mode is a special mode which allows programming the Core module directly with your project's Script. This means the Script will run without having to be connected directly to a computer.



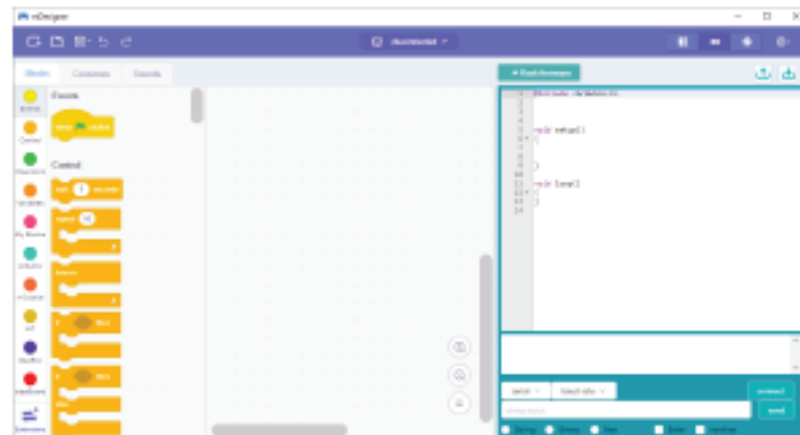
The Core module is programmed with your Script and runs without being connected to a Computer.

Arduino Mode Location



Click here to switch to Arduino Mode.

Arduino Mode is now activated.



Live Mode - Uploading

Here are the following steps;

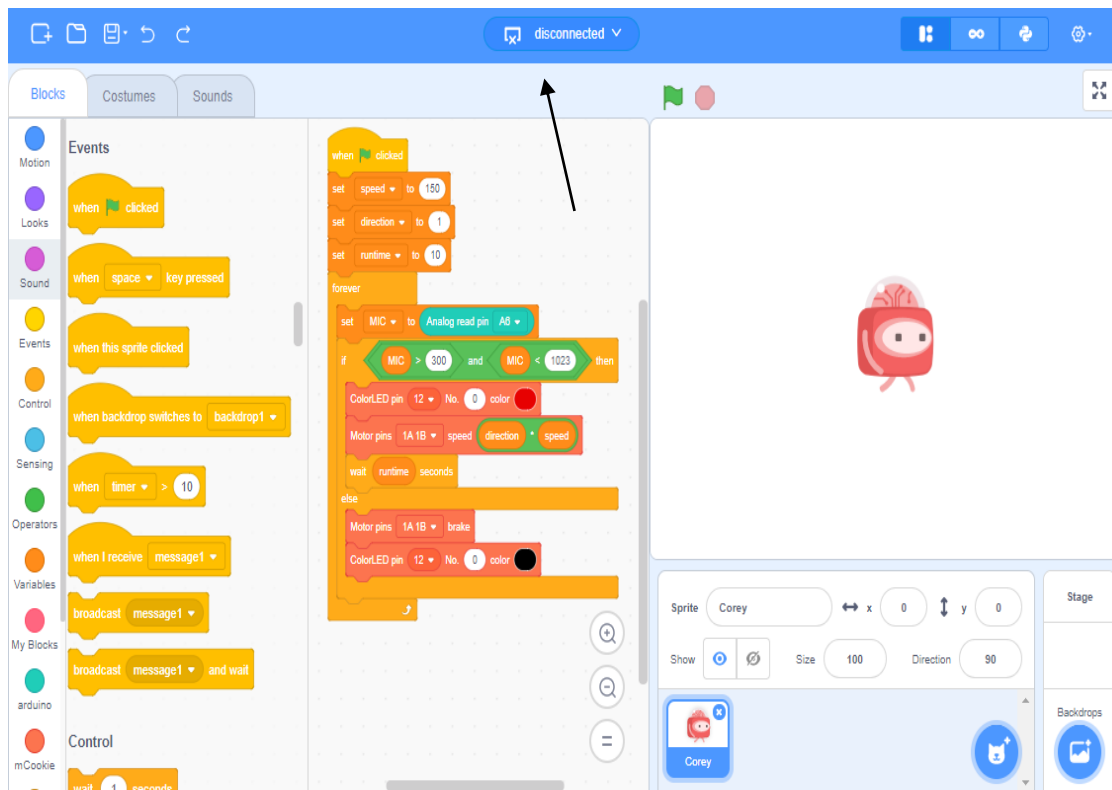
1. Click on the Live Mode link in the upper right corner of the mDesigner.



2. Connect the hardware/project as you normally, i.e.; (mCenter/mBattery turned on and plugged into your computer with a USB cable)

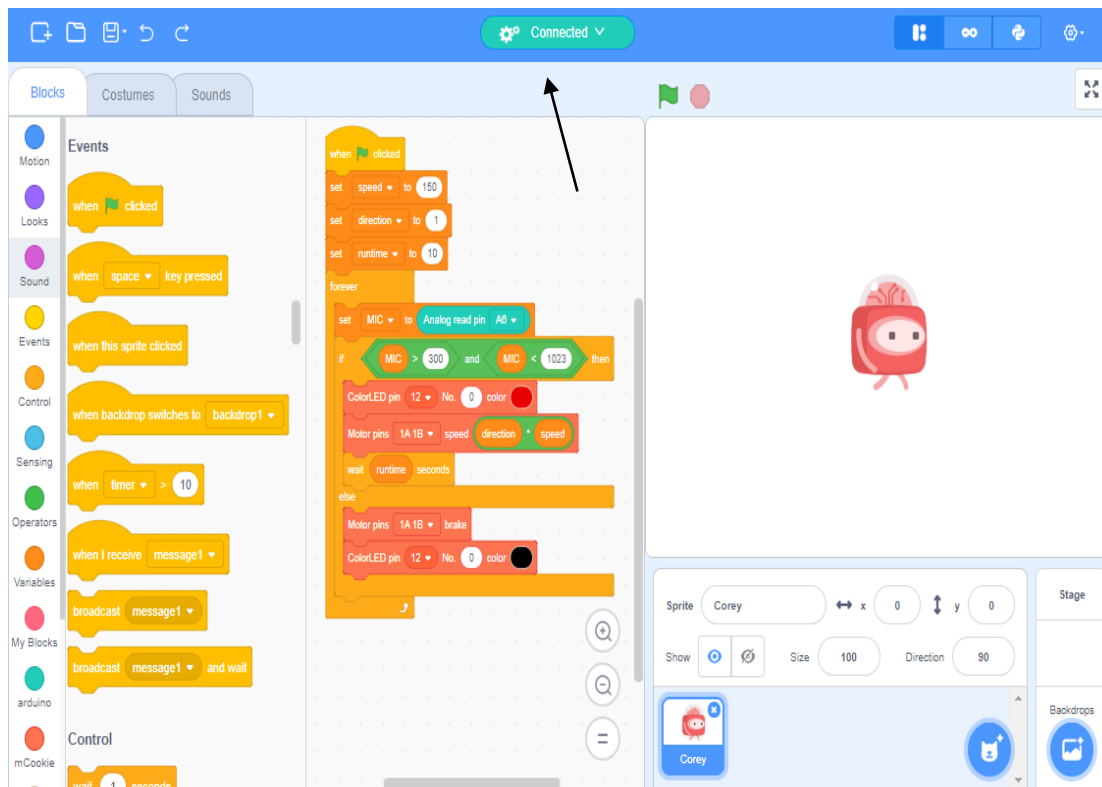
Live Mode - Uploading, (cont.)

3. Select the Serial port the project is connected to.



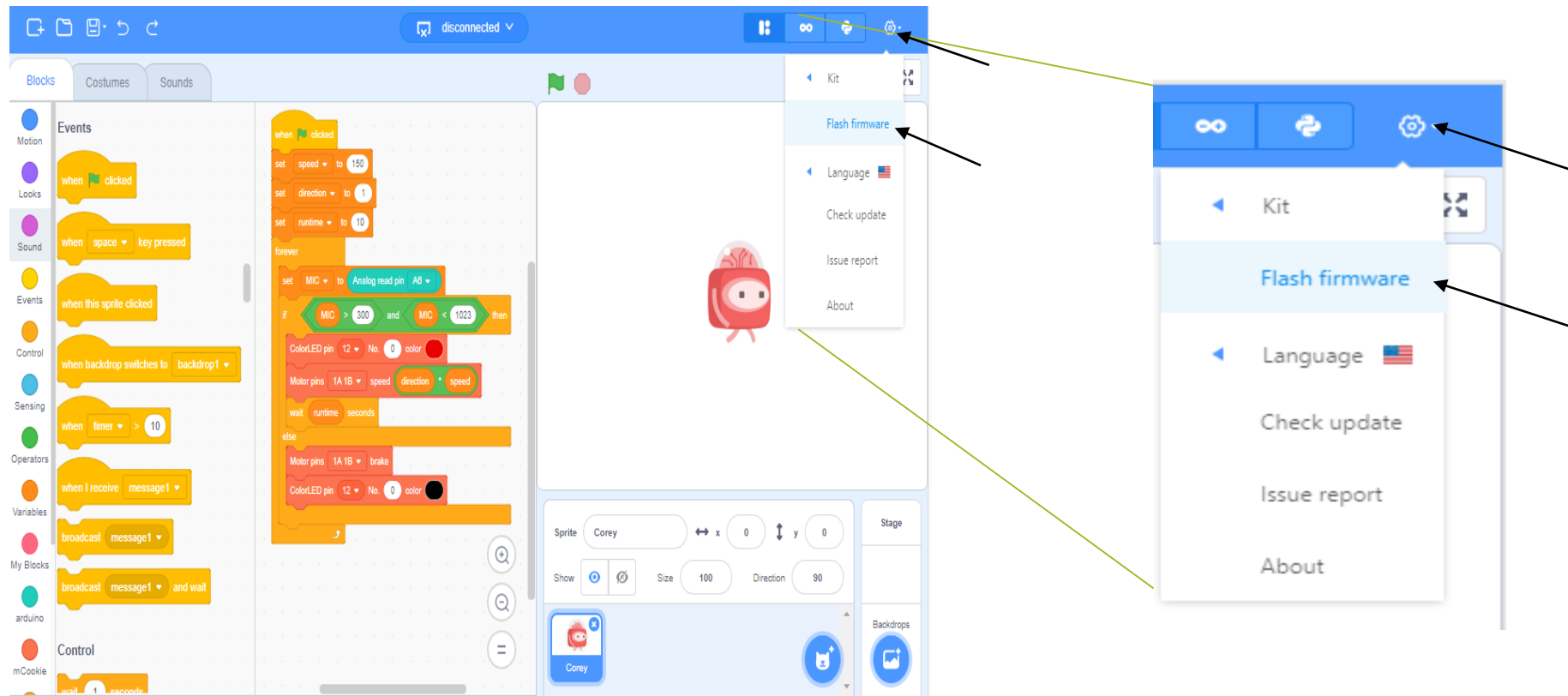
Live Mode - Uploading, (cont.)

4. Confirm you are “Connected”



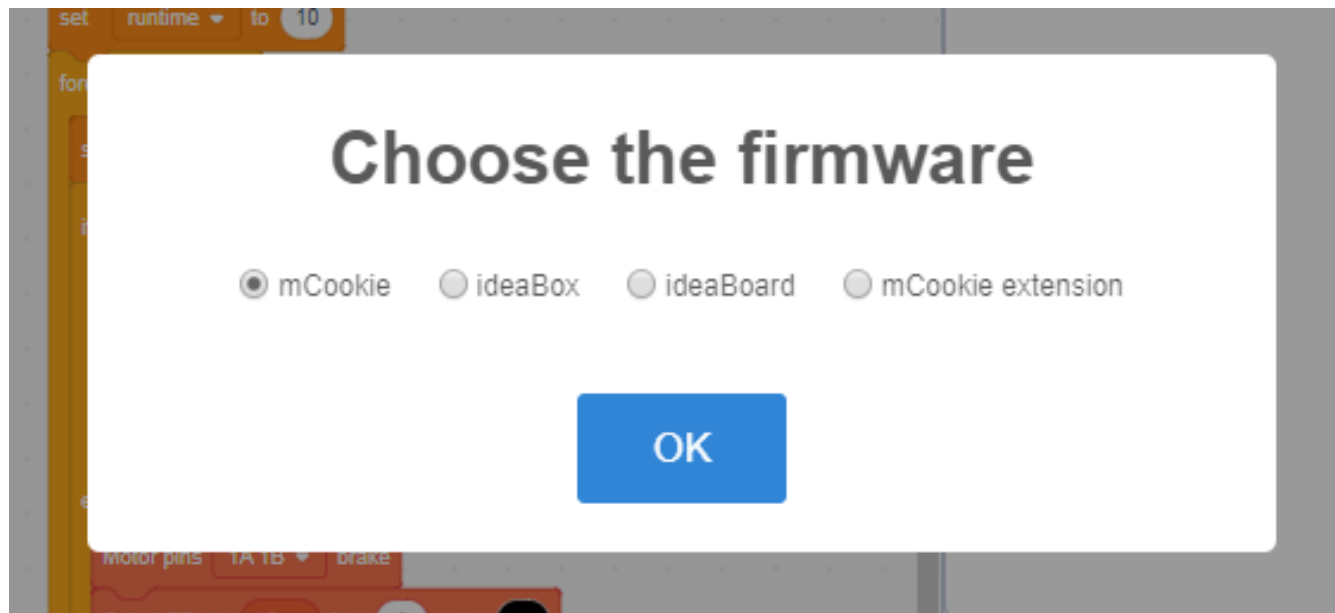
Live Mode - Uploading, (cont.)

5. Click on the Setting button, (upper left). Then select “Flash firmware”.



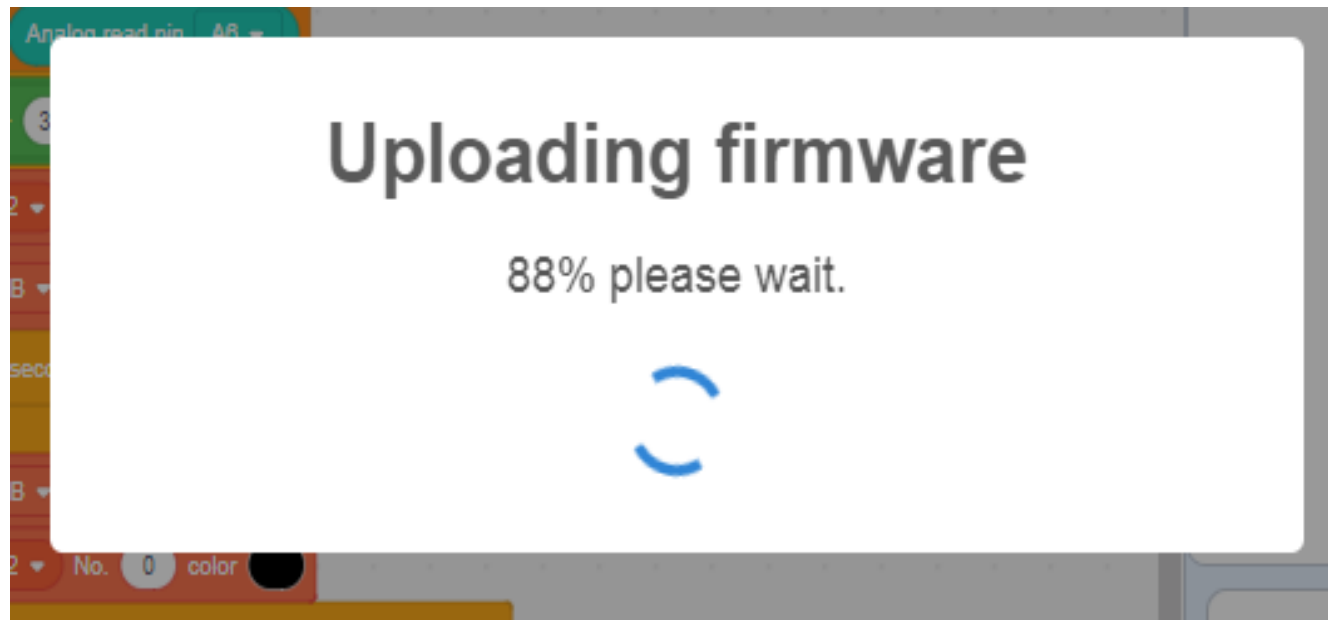
Live Mode - Uploading, (cont.)

6. Next, choose mCookie firmware and press OK.



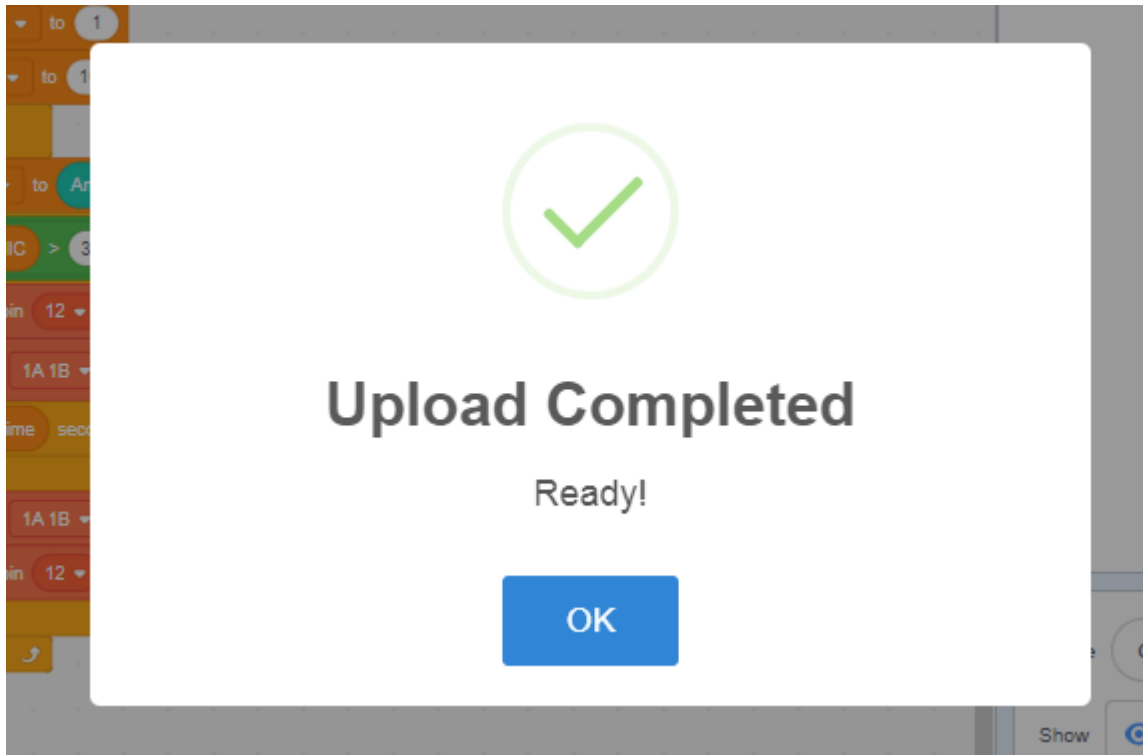
Live Mode - Uploading, (cont.)

7. The firmware is uploaded.



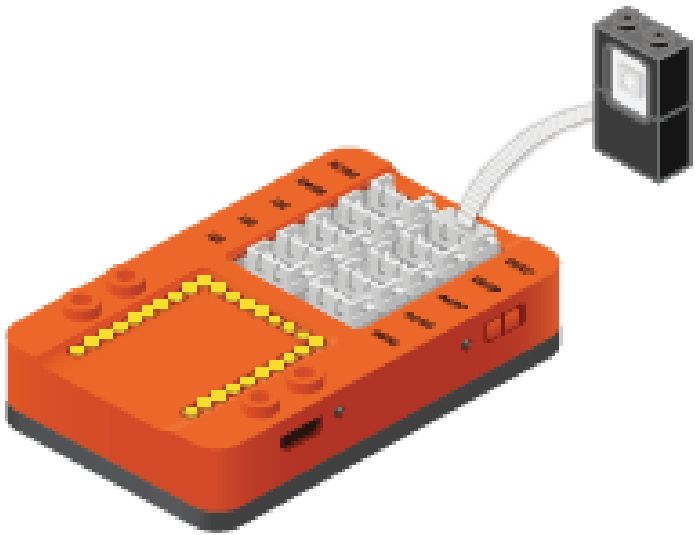
Live Mode - Uploading, (cont.)

8. Ready! Click on OK.



Live Mode - Uploading, (cont.)

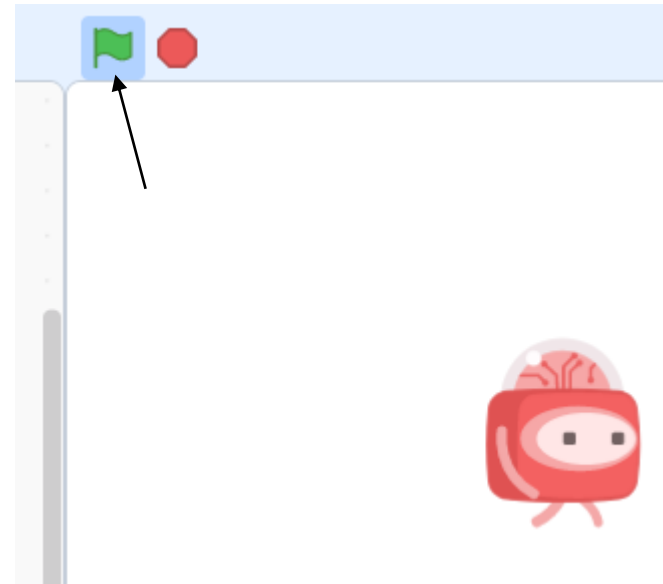
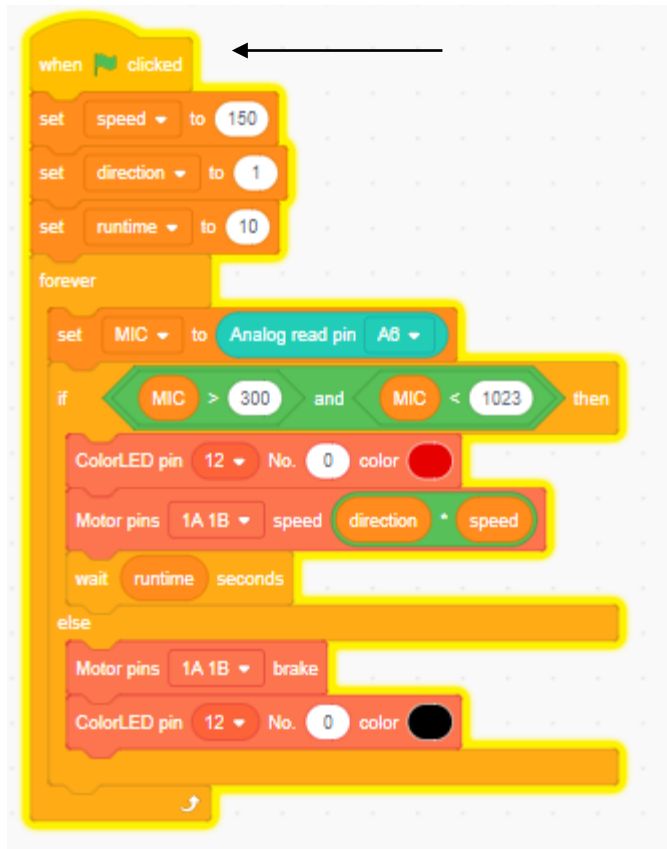
9. Do not disconnect the project from mCenter/mBattery..



Make sure the power is on. The Script will run on the connected computer.

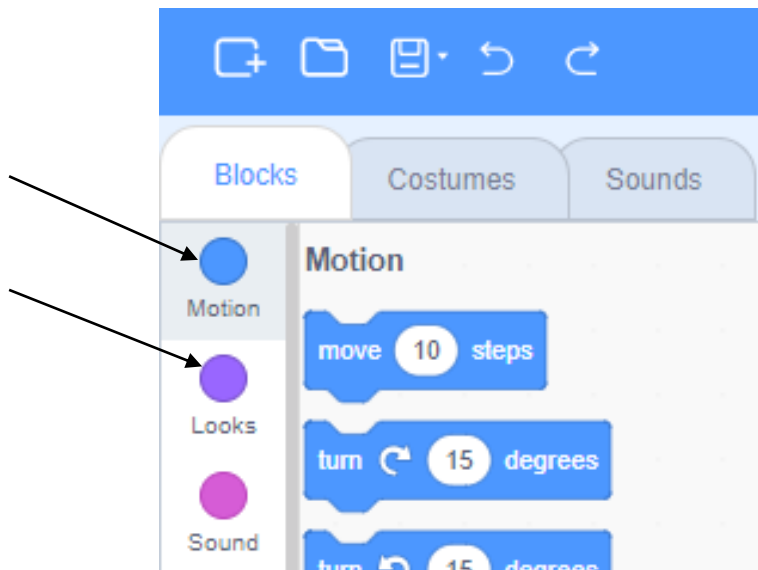
Live Mode - Uploading, (cont.)

10. Finally, click on “When clicked “ OR click on the green flag to initiate the program.



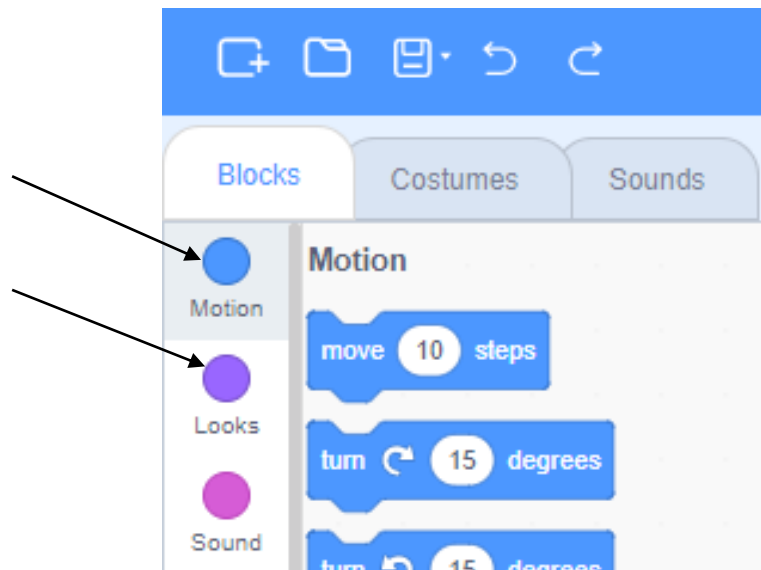
Arduino Mode -Unavailable Blocks

Not all Blocks are available in Arduino Mode. In particular, Blocks relating to the Actor/Sprite (under Motion & Looks Block categories) would not be possible to implement to run independently on the CPU/Core Module.



Arduino Mode -Unavailable Blocks

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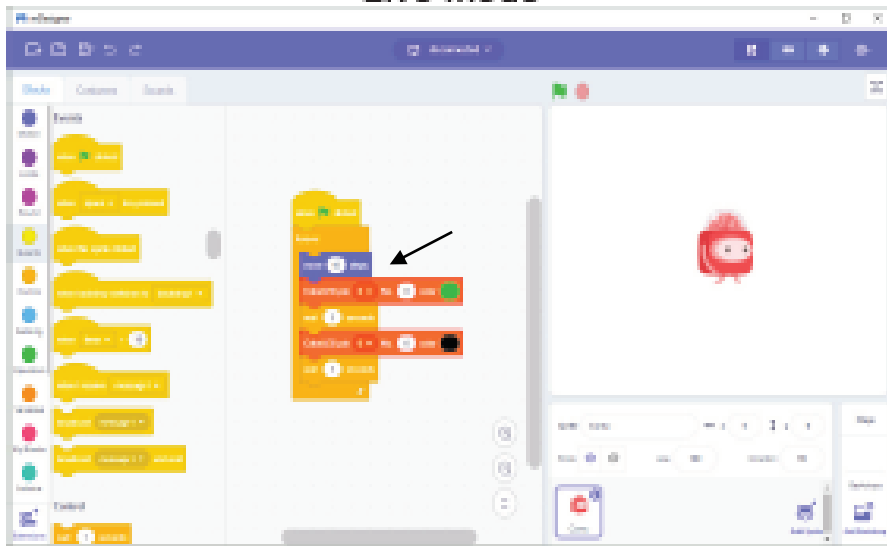


Block categories which are not in Arduino Mode are: Motion, Looks, Sound and Sensing and possibly others. Blocks under these categories (but not limited to) will not be usable in the Arduino Mode.

Live Mode Script to Arduino Mode

A Script created in Live Mode may contain Blocks which are not usable in Arduino Mode, (see arrow below). This will cause an error. (see circle below).

Live Mode

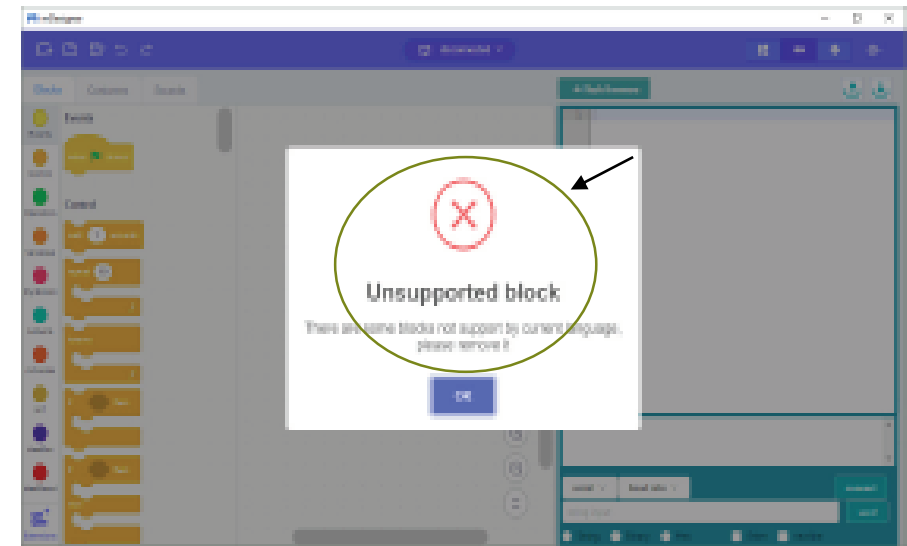


Valid Script in Live Mode.



Switch from Live Mode to Arduino Mode

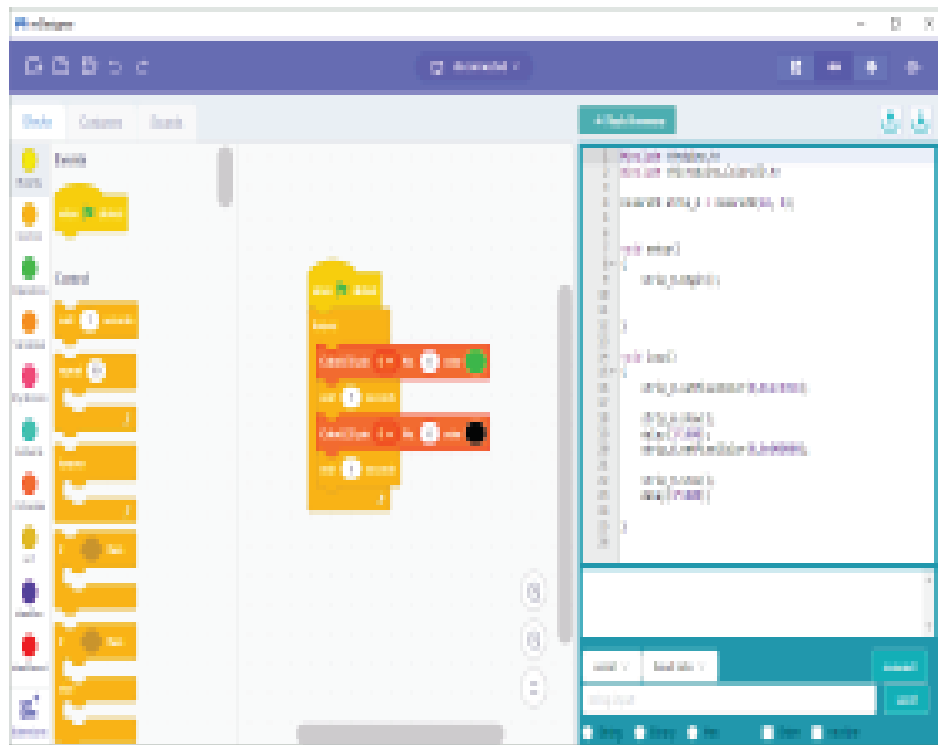
Arduino Mode



The same Script causes an "Unsupported block" error.

Live Mode Script to Arduino Mode, (cont.)

Arduino Mode



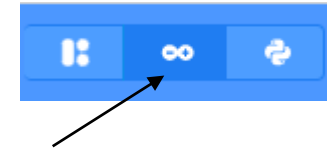
The un-usable Blocks must be removed before programming the Core Module.

Arduino Mode - Uploading

Here are the following steps;

1. Ensure that there are no un-usable “Arduino Mode” Blocks in your script.

Then, click on the Arduino Mode link in the upper right corner of mDesigner.

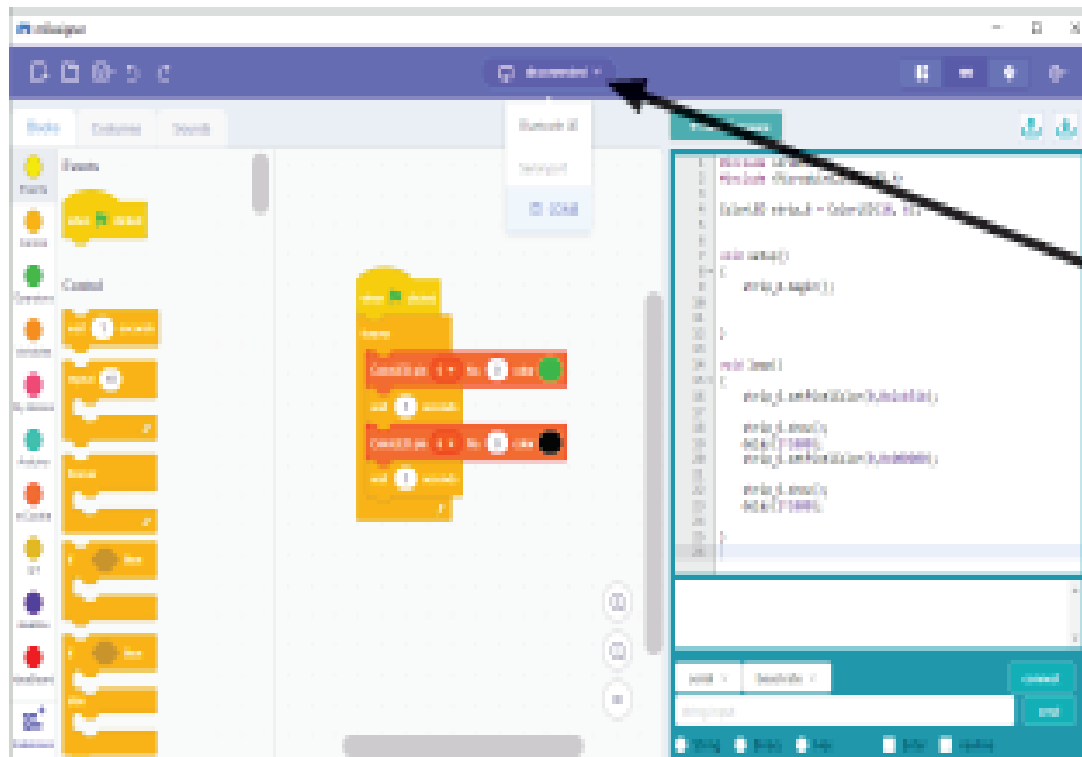


2. Connect the hardware/project as you normally would in Live Mode, i.e.;

(mCenter/mBattery turned on and plugged into your computer with a USB cable)

Arduino Mode - Uploading, (cont.)

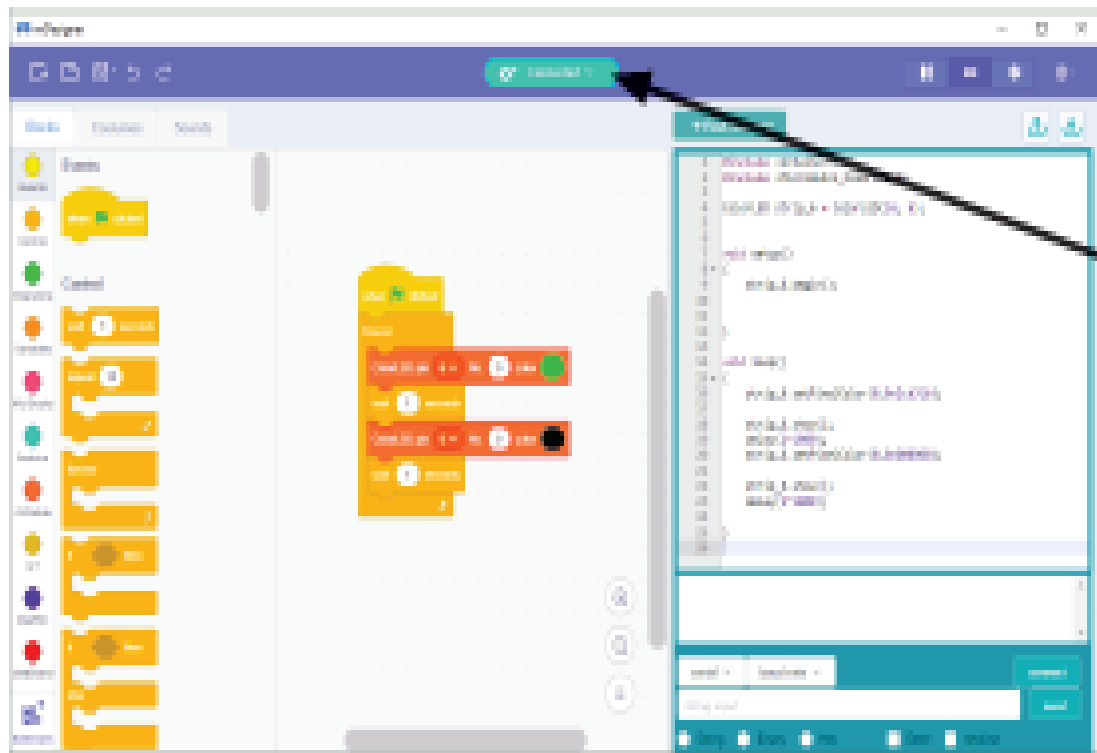
3. Select Serial Port



3. Select the Serial Port your project is connected to.

Arduino Mode - Uploading, (cont.)

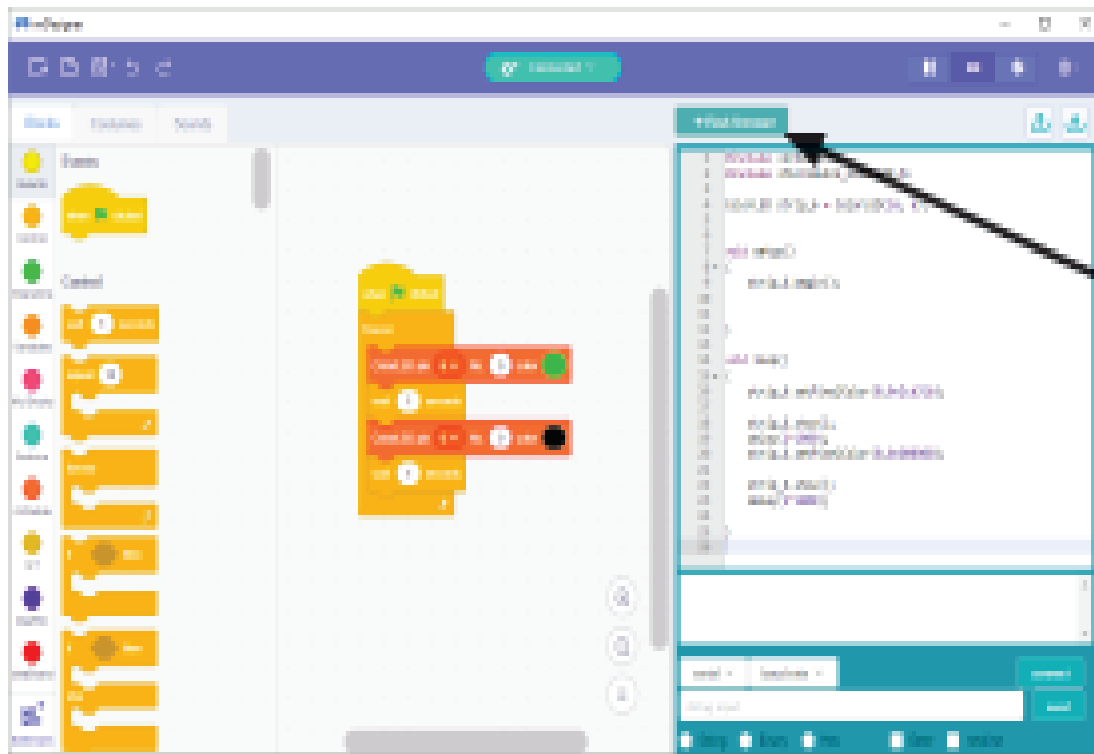
4. Confirm you are “Connected”



4. Verify you are “Connected”.

Arduino Mode - Uploading, (cont.)

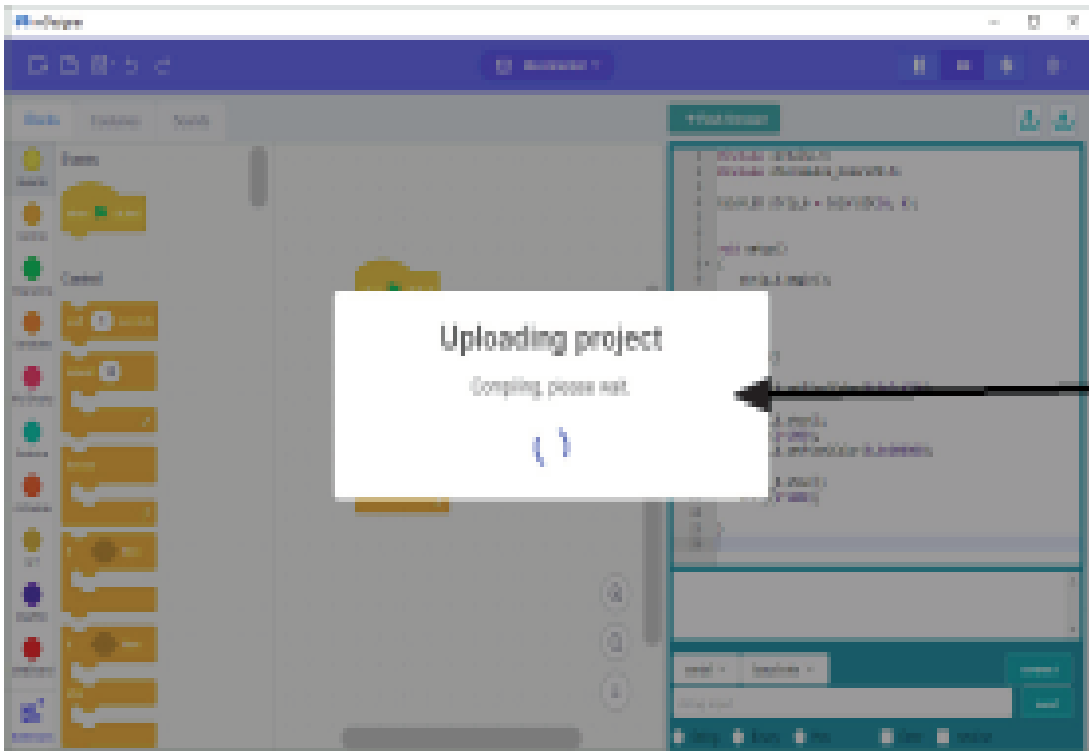
5. Click “Flash firmware”



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Arduino Mode - Uploading, (cont.)

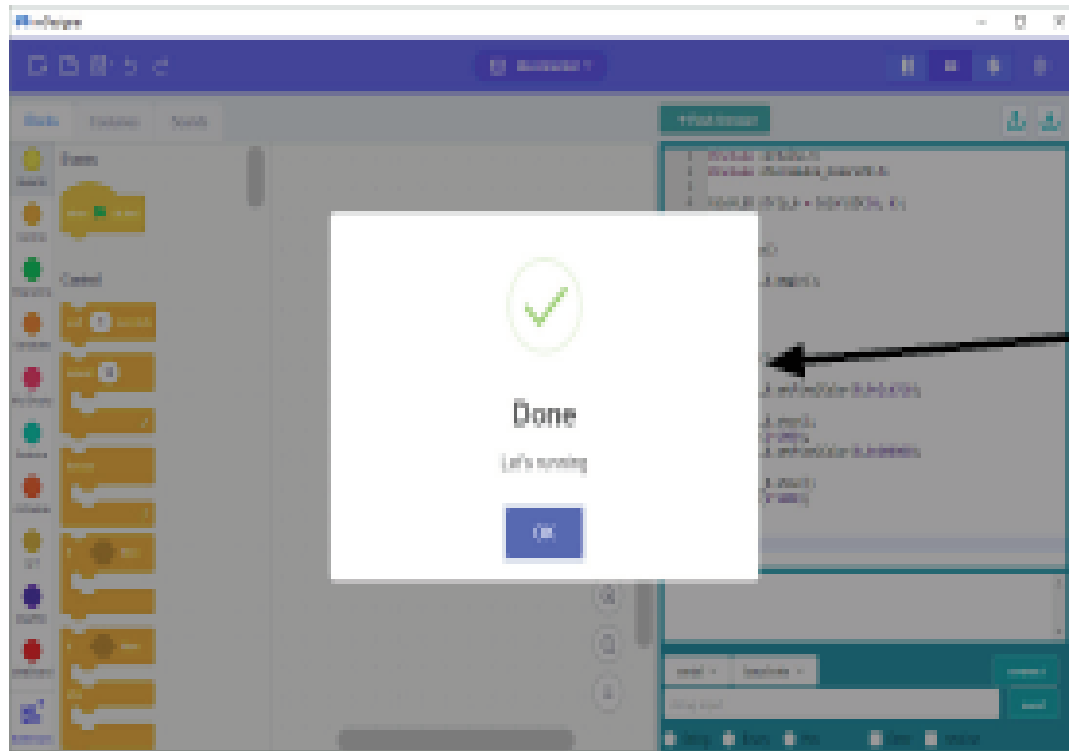
6. The Script compiles



6. The Script will compile.

Arduino Mode - Uploading, (cont.)

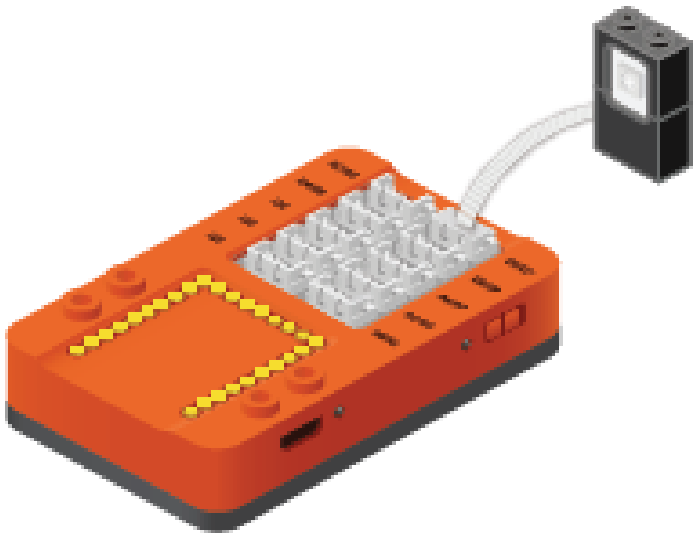
7. Done



7. Once the compiling and upload is complete a "Done" message will appear.

Arduino Mode - Uploading

8. Disconnect..



8. Disconnect your project from the Computer and power it on. The Script runs locally on the Core module!

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