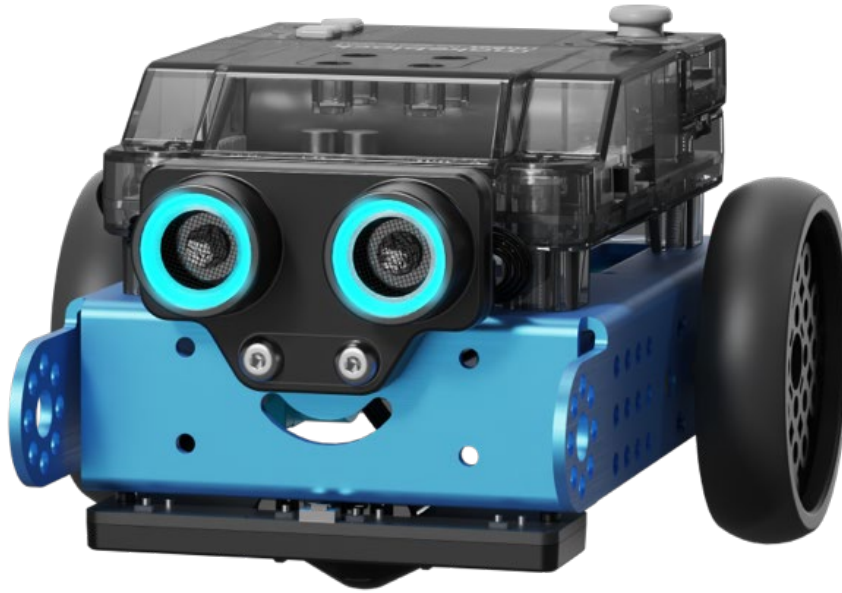


Setting Up Your Makeblock mBot2



This worksheet is to help set up the software on Makeblock mBot2 robots before classroom activities and help navigate issues that could arise when students are using them. Note that the images captured here are using the software installed on an Apple iPad. If using an Android tablet, the colors and exact look may be different but visual code blocks, menus, and steps are the same.

This document assumes that the Makeblock mBot2 robots have been assembled prior to this setup. Detailed instructions for this assembly are included with the mBot2 but can also be found using the links below:

- **mBot2 Overview:** <https://youtu.be/uxpoP175mOU?si=G4O316qSIs1wXV1e>
- **mBot2 Assembly:** <https://support.Makeblock.com/hc/en-us/articles/1500006253942-Assemble-mBot-Neo-mBot2>
- **mBot2 Support:** <https://support.Makeblock.com/hc/en-us/sections/1500001036301-mBot-Neo-mBot2>

The mBot2 robots can be set up in 2 ways to support this activity:

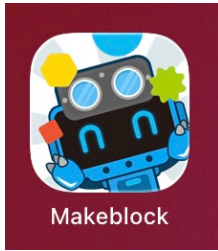
1. Using the existing software which provides a remote-control option of the mBot2, allowing students to control the movement of the robot (after pairing with the tablet or laptop) using buttons that are accessible on the screen.
2. Using the existing software to "program" the mBot2 using block-coding, allowing students to build their own "remote" that they can use to control the movement of the robot (again after pairing with the tablet or laptop).

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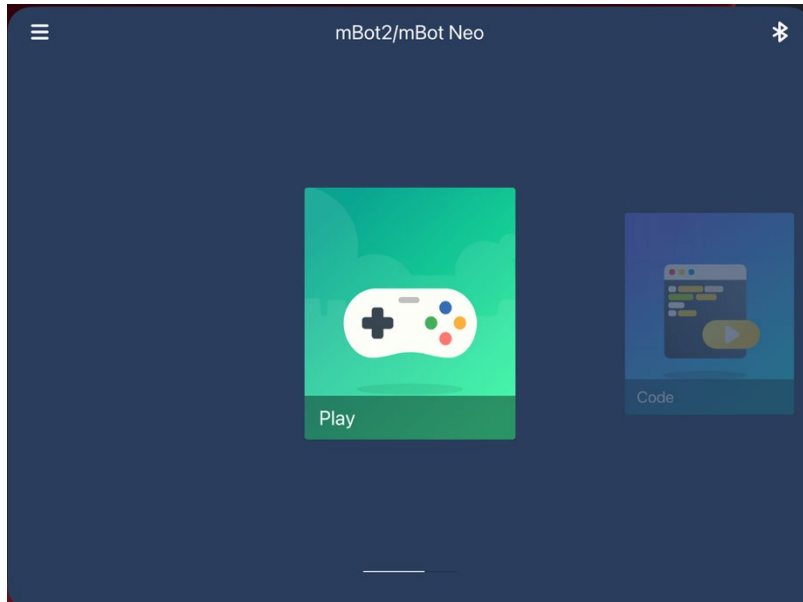
Class:

Using Makeblock mBot2 with Existing Software



The **Makeblock** application, which is available for Android and iOS devices, allows teachers and students to use the mBot2 without having to develop their own custom code.

After installing this application, you can open it by clicking its icon (the 2026 version of this icon is shown here).



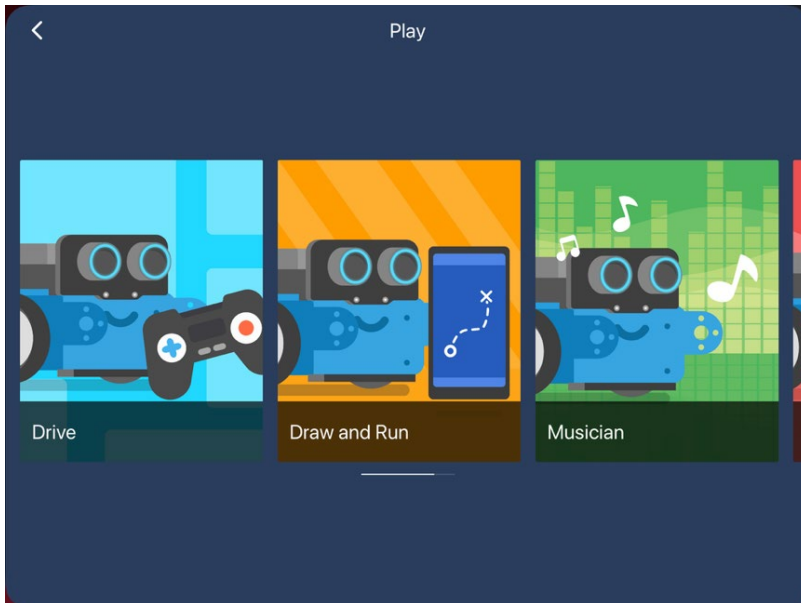
In the application, select the **Play** menu option (shown here) which will provide a graphical user interface for motion controls for the mBot.

You will be prompted to connect to your mBot. To do this turn on your mBot (or if already on, reset by toggling off then on again so it enters the correct pairing mode) and then select the connect now (or similar option).

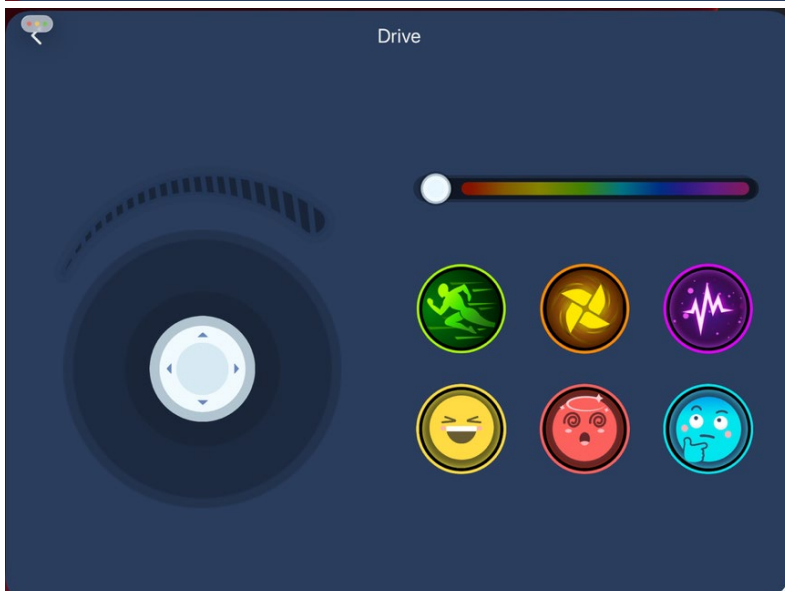
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From the **Play** options, select **Drive** (shown to the left) which will bring up the on-screen controls.



The joystick on the left can in this menu is used to control the direction and speed of the mBot2. **It does take time to become familiar with how to use it!** Giving time to practice is helpful before using it directly in an activity.

The button options cause the mBot2 to do pre-determined activities. Caution that some of these turn the mBot2 motors on at their fastest speed for 3 seconds (which can lead to mBots falling off tables and hitting objects if not prepared).

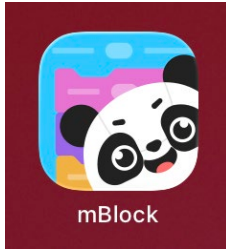
Before using it in your class, try each out so you understand its function and can explain it to your students.

Using Makeblock mBot2 with Existing Software

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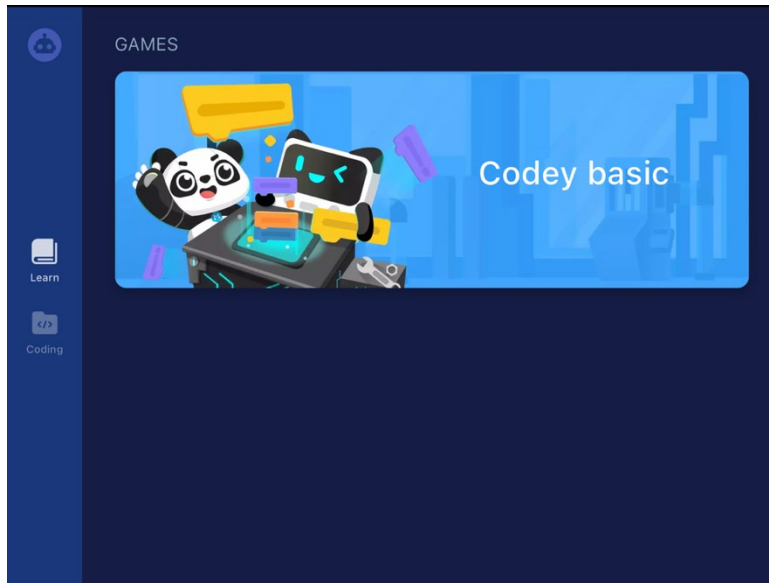
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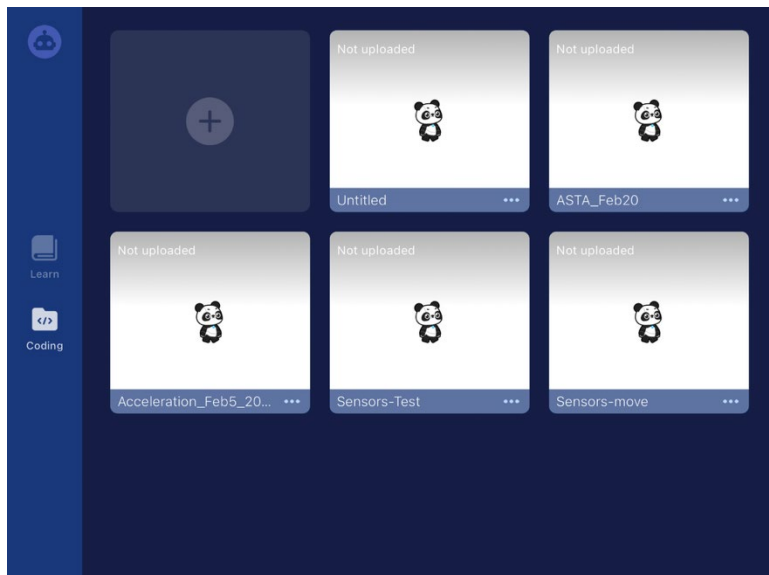


The **mBlock** application, which is available for Android and iOS devices, allows teachers and students to control the mBot2 by writing their own computer code using the block-based coding system.

After installing this application, you can open it by clicking its icon (the 2026 version of this icon is shown here).



In the application, select the **Coding** menu option (shown here on the left). This will take you to the next menu where you can start a new program to write or select an existing one you have written before.

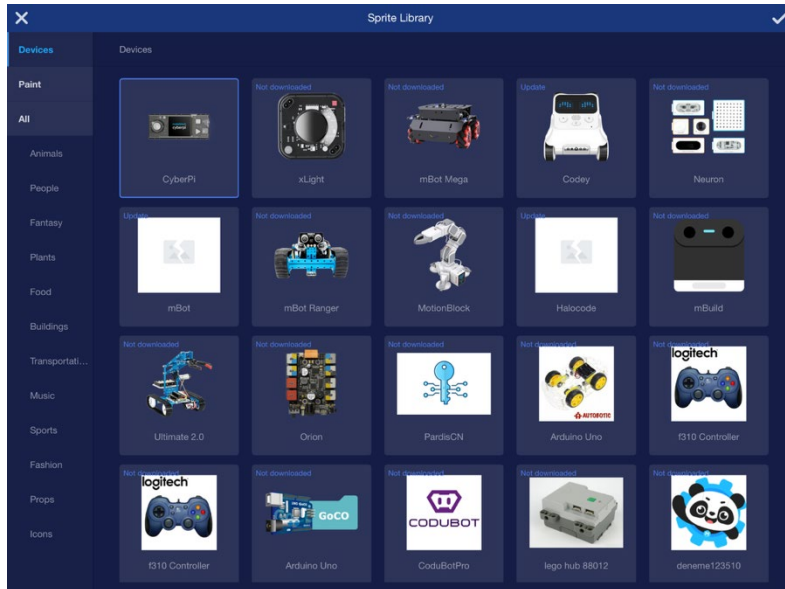


In the **Coding** menu, select the (+) graphic to start a new session for coding that you can save. Notice in the image shown here that previous coding sessions have been saved (e.g., ASTA_FEB20, Sensors-Test, Sensors-move) are all previously developed code that could be opened and used. If you are doing this for the first time, you will not have any previously code saved or shown.

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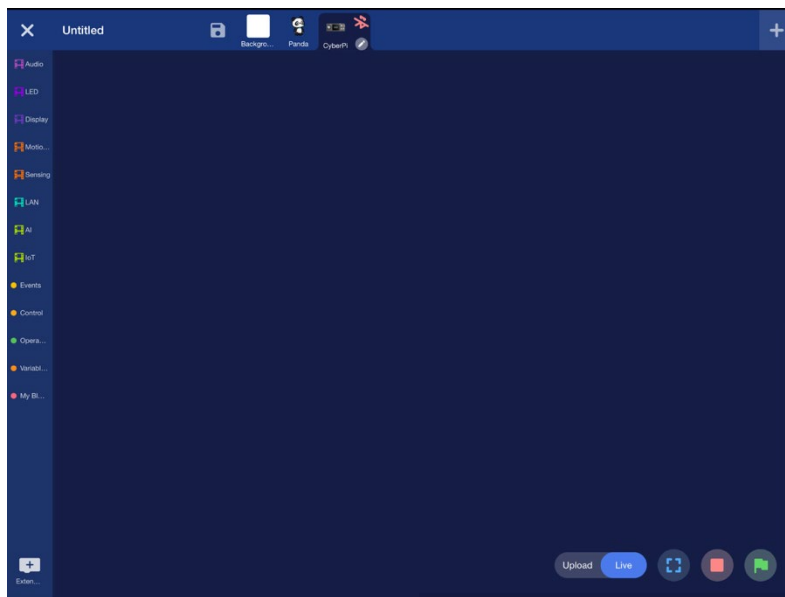
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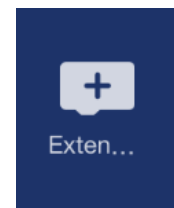
Before you can develop code you need to select the device that will be programmed. This is the **CyberPi** (shown on the image to the left). After selecting, click the checkmark in the top right corner to finalize.

The **CyberPi** is the "brain" of the mBot2 which receives the code you develop and then controls the connected motors and sensors.



Now that the **CyberPi** has been selected we need to add the special visual code blocks for movement control of the **mBot**.

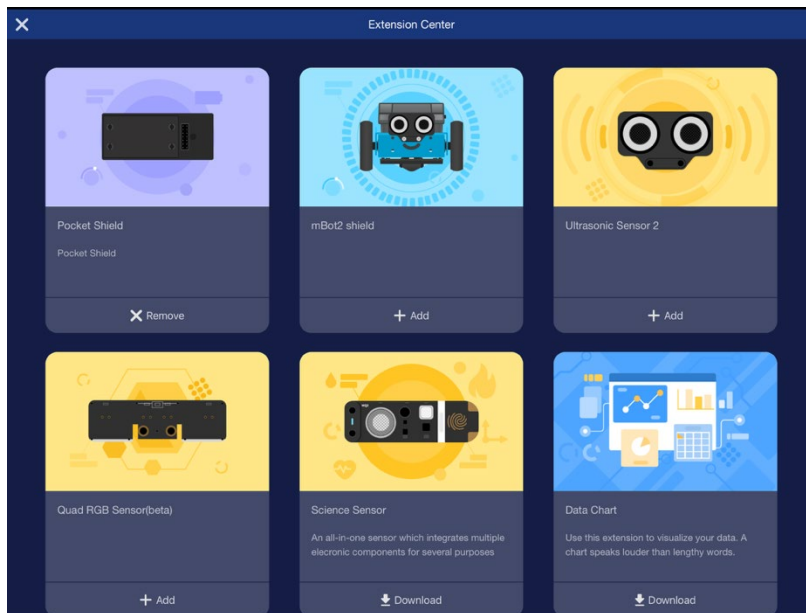
You can add this by clicking the **extension** icon in the lower left corner.



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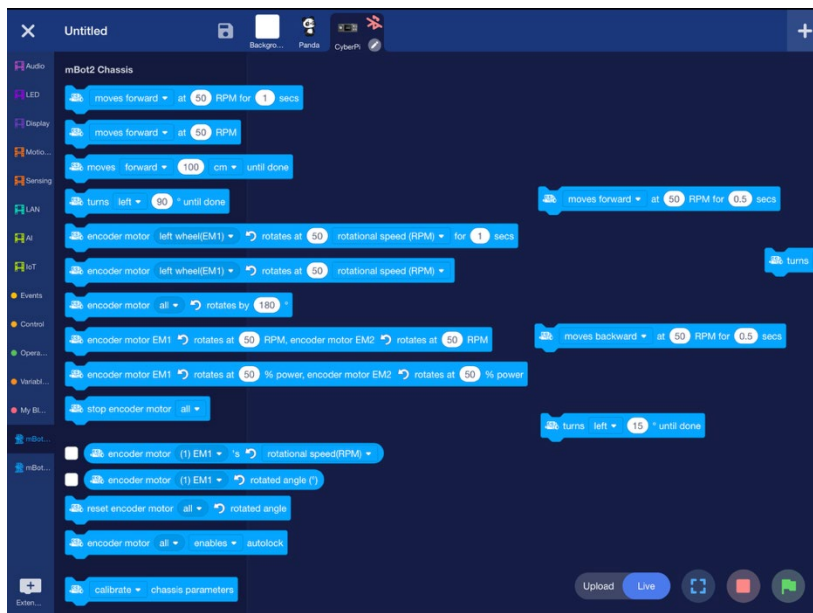
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In the **Extension Center** select the **mBot2 shield** option. If this is the first time using the application, you will select the Download option first (and you will need to be connected to Wi-Fi).

After downloading, the menu will change and you can select **+Add**.



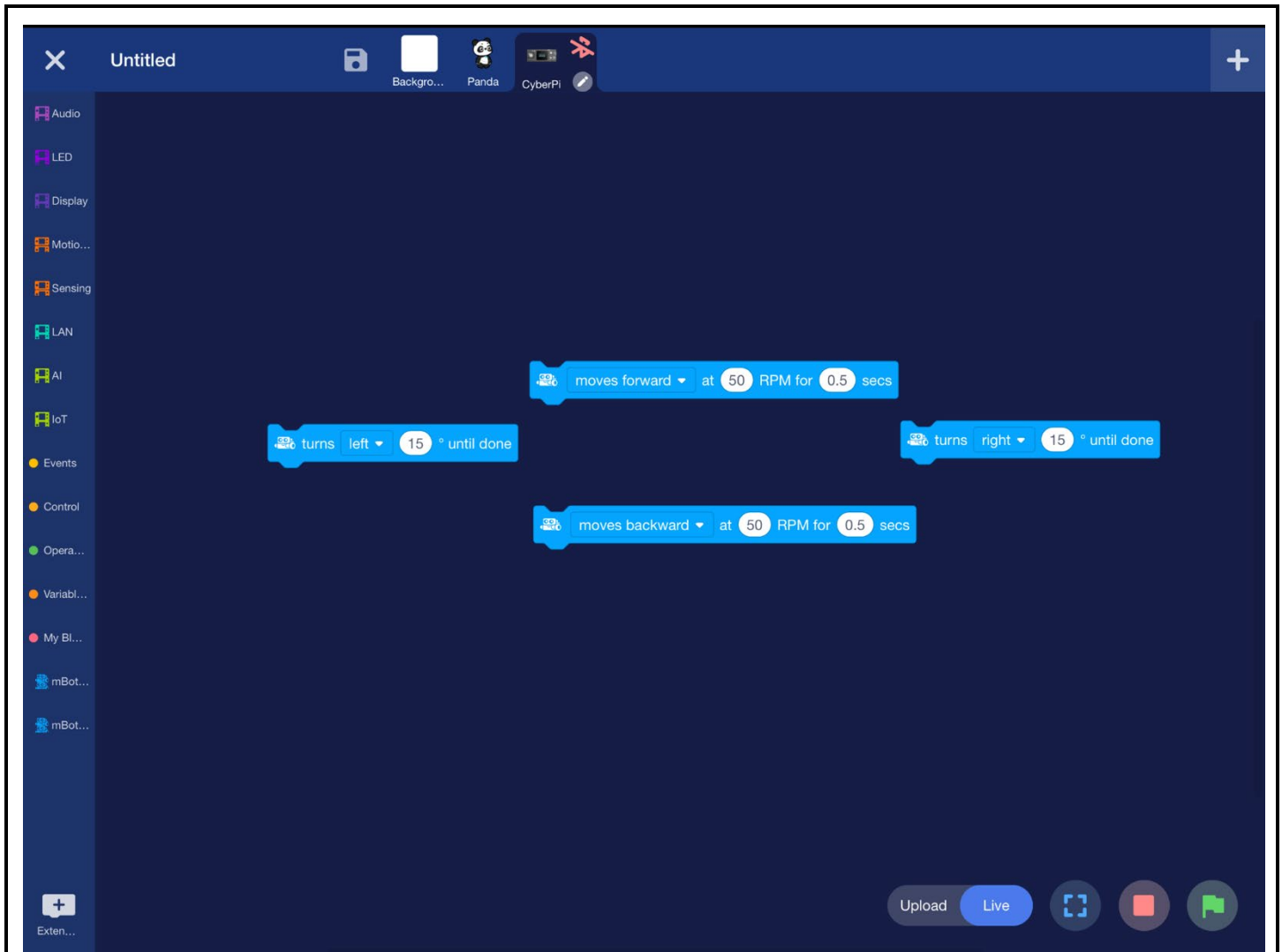
This will add new visual coding blocks that you can use on the coding screen. These added blocks will be available through the "mBot" options on the left side of the screen.

The image to the left shows the **mBot2 Chassis** options that can now be dragged into the coding screen area.

Name:

Date:

Class:



To build a simple controller that will move the robot forward, backward, turn left, and turn right you can add the blocks shown above by dragging them (from the **mBot2 Chassis** menu) into the main screen.

The timing value for the **move forward** and **move backward** visual blocks were changed to 0.5 from 1 (their default). To change the value, click on the editable items (e.g., the numbers).

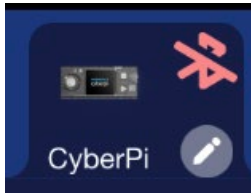
The turn value for **turn left** and **turns right** visual blocks were changed to 15 from 90 (their default).

When each block is clicked they will initiate that action while the system is in the **Live** mode (which is seen at the bottom right of the screen) and the tablet/laptop is paired to the **mBot**.

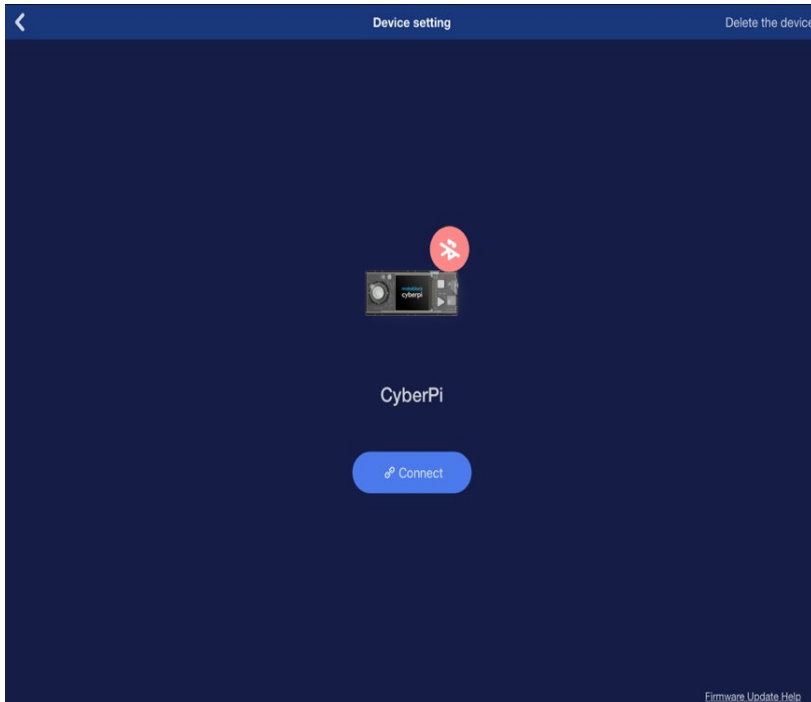
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Class:



In the example shown, the **mBot** is not connected. This is displayed as a red Bluetooth symbol at the top of the screen for the CyberPi. To connect, click the pencil symbol here to edit.



In the **Device setting** menu, click the **Connect** option after you have turned on your **mBot2**.

If your **mBot2** has been turned on for a few minutes before this step, you may need to turn it off and then on again to get it into the pairing mode for this to work.

After it pairs (it notifies you and plays a sound) then you can use the visual coding blocks you placed on the screen previously.

It will take some practice to get familiar with your controller, so spend some time moving your mBot2 around and navigating so you explain it to your students.