



# Cubelets Blockly Overview

Cubelets Blockly is a visual drag-and-drop programming application for use with Cubelets robot blocks. Using Cubelets Blockly you can create custom “Personalities” or programs for individual Cubelets in a robot construction. Use Blockly to create more capable and creative robot constructions!

Download Cubelets Blockly on [modrobotics.com/cubelets/apps](http://modrobotics.com/cubelets/apps)

## Main screen for Cubelets Blockly

The screenshot shows the main interface of Cubelets Blockly. At the top, there are three callout boxes: 'Program Tabs: Switch between programs or double click to rename.' pointing to a tab labeled 'Hello\_World'; 'Create, Save, Load, Pair: Use these buttons to create, save, or load programs. Or return to the pairing screen.' pointing to a set of icons (+, =, I, @); and 'Help/Settings: Trouble programming? Try these options.' pointing to a gear and question mark icon. On the left, a vertical menu lists block categories: Sensing, Acting, Thinking, Messaging, Timing, Logic, Loops, Math/Numbers, Variables, and Functions. Two callout boxes point to this menu: 'Cubelets-specific blocks: Code blocks unique to Cubelets robot blocks.' pointing to the top four categories, and 'Non-specific blocks: Default code blocks common to all Blockly programs and programming languages.' pointing to the bottom six categories. The central canvas area contains two code blocks: 'setup do' and 'forever do'. A callout box at the bottom points to this area: 'Canvas: Working area for creating a Blockly program.' On the right, a 'Block Map' shows a 3D representation of a robot with three cubelets. A callout box points to it: 'Block Map: Select the Cubelet you wish to program.' Below the map, a 'Drive Cubelet' panel shows 'ID: 899563' and a list of system information (Custom Code, Hardware, Bootloader, Application, Mode). Two callout boxes point to buttons in this panel: 'Restore default: Reset selected Cubelet to default.' pointing to the 'Restore Default Program' button, and 'Program selected: Send open program to selected Cubelet.' pointing to the 'Program Selected Cubelet' button.

**Program Tabs:** Switch between programs or double click to rename.

**Create, Save, Load, Pair:** Use these buttons to create, save, or load programs. Or return to the pairing screen.

**Help/Settings:** Trouble programming? Try these options.

**Cubelets-specific blocks:** Code blocks unique to Cubelets robot blocks.

**Non-specific blocks:** Default code blocks common to all Blockly programs and programming languages.

**Block Map:** Select the Cubelet you wish to program.

**Restore default:** Reset selected Cubelet to default.

**Program selected:** Send open program to selected Cubelet.

**Canvas:** Working area for creating a Blockly program.

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# 08

Episode

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# Flashlight Hello World

A “Hello World” program is a simple program that is often the first program you will write when learning to code. For our Hello World program we are going to use the following blocks to create a brightly shining Flashlight Cubelet.

This exercise is designed to support Create with Cubelets Episode 8.

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## Program Goal.

Create a program for a Flashlight Cubelet that sets the brightness of the Flashlight LED to its maximum level.

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## Blocks you will use.



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## Helpful hints.

1. Actuator is a fancy term for the part of a machine that does something.
2. Most program elements should be placed in the black “Forever Do” loop.
3. Cubelets block values can be any whole number between 0 and 255.