Introduction to the littleBits Fuse App

Welcome to the littleBits Fuse app! Fuse gives you the opportunity to create virtual circuits of your Bits and expand upon your physical inventions by programming your Bits using conditionals, loops, and functions. In this guide, we will give you all the tools you need to get started with Fuse!

GETTING STARTED

Create Accounts

Students can use the littleBits Fuse app for circuit design and coding without an account. However, for students to save their work and load previously created circuits and programs, both teachers and students will need an account.
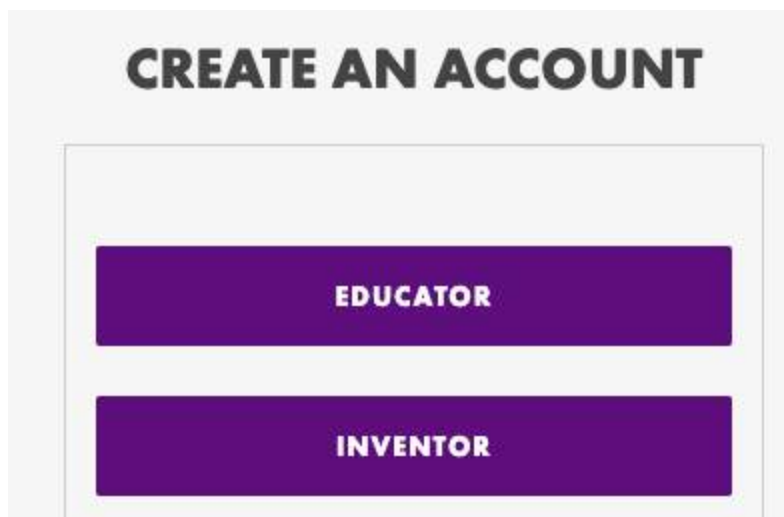

If you do not already have a littleBits Account, create one at:

https://classroom.littlebits.com/persona.

- **Educators**- Create an "Educator" Account. Note: Once your account is created you have the option to select your school.

- **Students**- Create an "Inventor" Account.
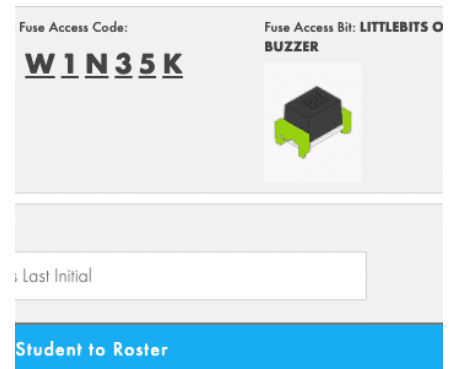
Create Classes (*Educators Only*)

Go to your Account Dashboard at https://classroom.littlebits.com/account/dashboard.
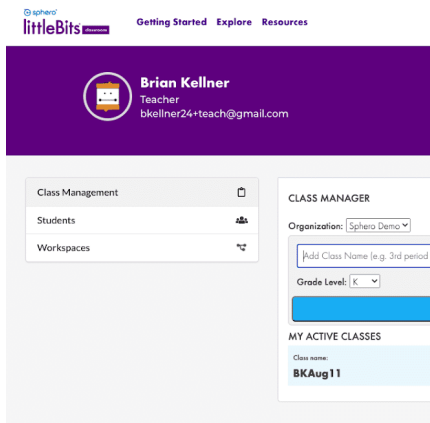
Add your class under the "Class Management" tab. Give you class a name, select a grade level, and click "Add".
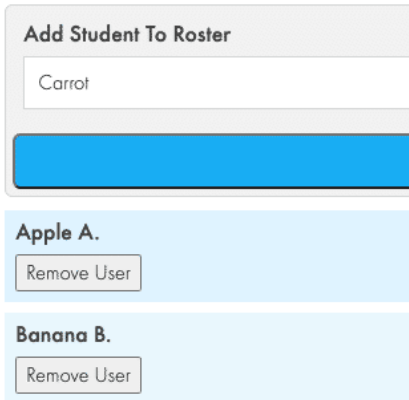
Click on the class and add students to the class roster.

A unique classroom code and access Bit will be automatically generated for each class you create.

Login to Fuse

Open up the Fuse app in your web browser and login with your student or teacher account.

☐ **Educators**- Provide your students with the unique access code and Bit that is assigned to the class.

☐ **Students**- After clicking on the student option, enter the access code and Bit that your teacher provides to you. Then, select your name from the class roster and sign in to Fuse.
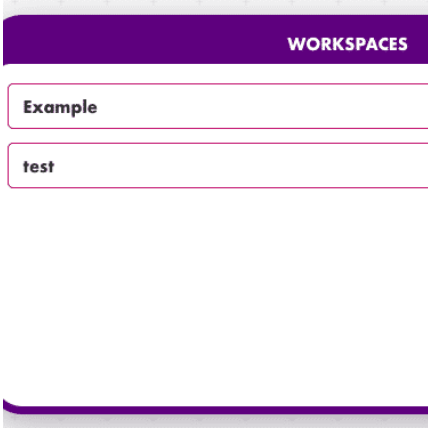
Notebook and Workspace

Once logged in to Fuse, you can use the Notebook and Workspace to save and load circuit designs, programs, and notes.
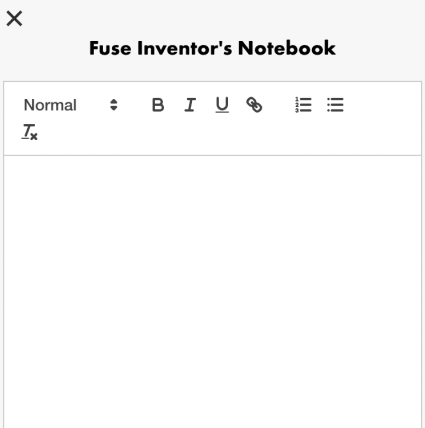
Save and add notes by clicking and opening the green tab on the right edge of the Fuse home screen.
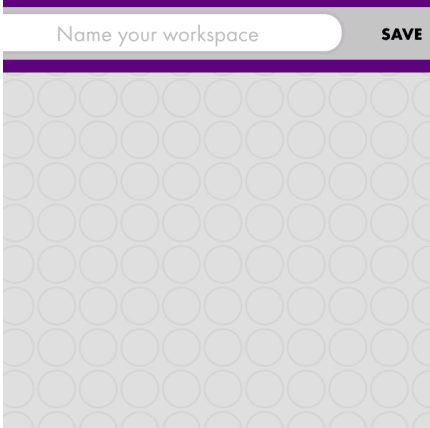

Save a workspace by typing a name into the box at the top middle of the screen and clicking the Save button.

Load a workspace by clicking the Load button and then selecting from the pop-up dialog box.

FUSE CIRCUIT BUILDER

The Fuse circuit builder allows you to create virtual circuits in your own workspace and learn how littleBits' snap together to ensure their Bits are compatible and their inventions can come to life.
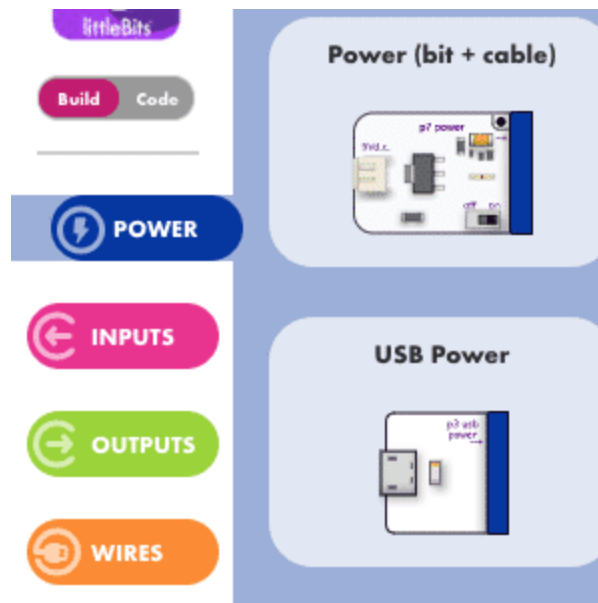
When you open Fuse, it automatically starts in "Build" mode. You can click on any of the four categories to see your Bit choices.

- **POWER** is needed in every circuit and is the start of all your creations.

- **INPUT** Bits add control to the circuit, through information provided from you and/or the environment, and send signals to the Bits that follow.

- **OUTPUT** Bits complete an action or task (for example: light, buzz, or move). These are the Bits that "Do Something".

- **WIRE** Bits expand the circuit's reach and change direction . Use the wire Bits to help place Bits exactly where they want, especially if they are embedding inside a structure. Some orange Bits also add a level of complexity and programmability to the circuit .

Building Circuits
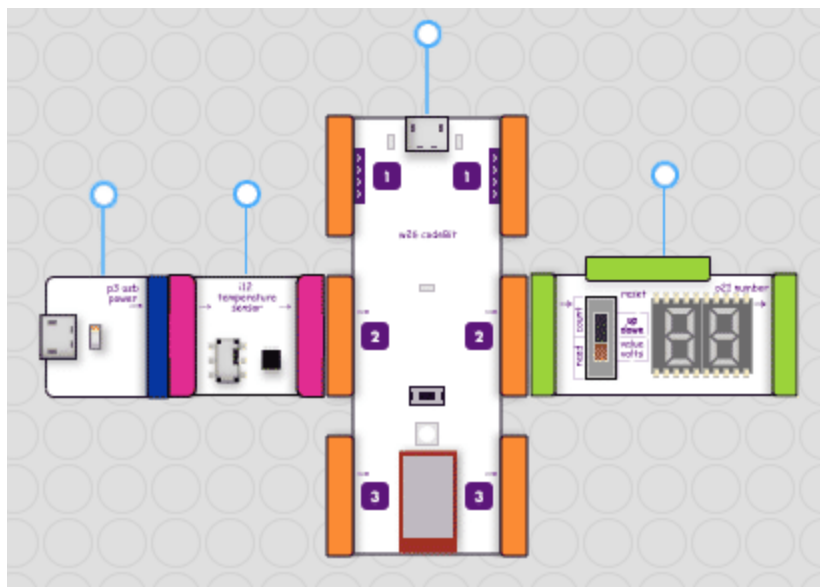
To start building a circuit, just click and hold on a Bit and drag it onto the canvas. You can drag the colored edges of the Bits together to create your circuit.

Hint: You will know that the Bits have snapped together when you hear a "snap" sound and see a green confirmation bar at the top of your screen.
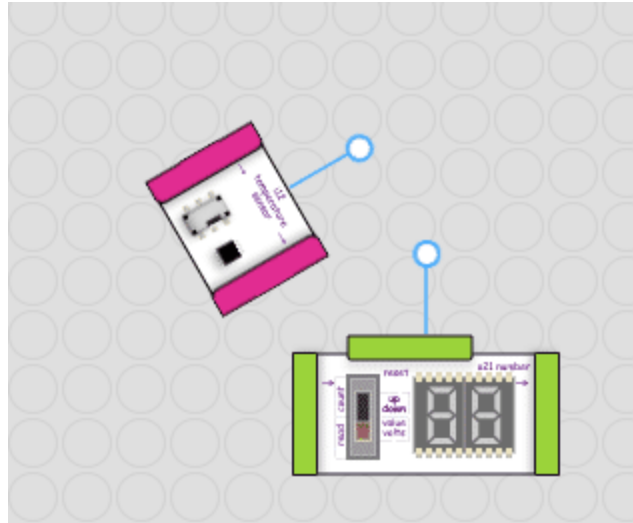
The white dots with the blue outlines allow you to rotate a Bit if you need to connect vertically. Just click on the dot and hold as you drag in a circle to rotate the Bit.


☐ If you want to remove Bits from the working area, you can drag them to the trash can, click the undo arrow, or click "clear all" if you want to remove all the Bits. The redo arrow will revert changes done with the undo arrow.

☐ To learn more about each Bit and how it functions within a circuit, check out the Bitopedia at https://classroom.littlebits.com/bit-o-pedia.

FUSE CODING CANVAS

The Fuse coding canvas allows you to expand upon what your inventions can do to program your Bits using conditionals, loops, and functions. When you open Fuse, it automatically starts in "Build" mode. Click on the "Code" button to switch to coding mode.
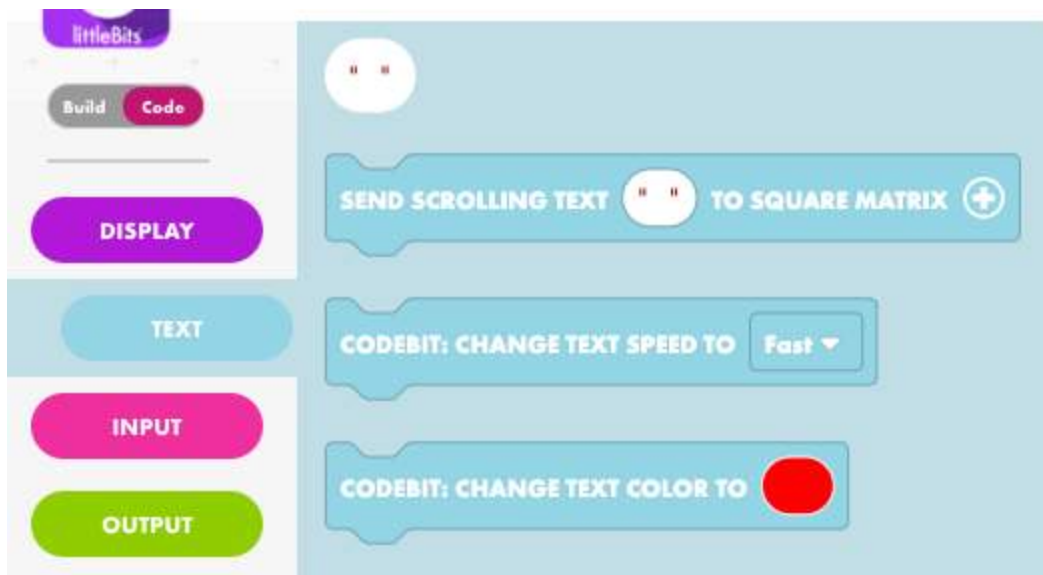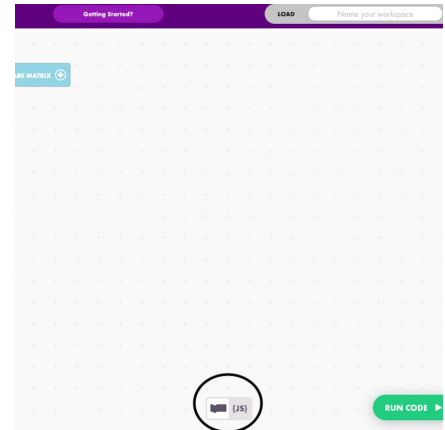

Each of the buttons on the left of the screen displays a set of block coding options.
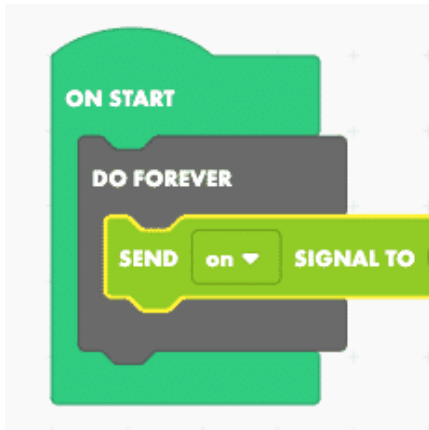
Drag blocks into the "On Start" block to form your program.
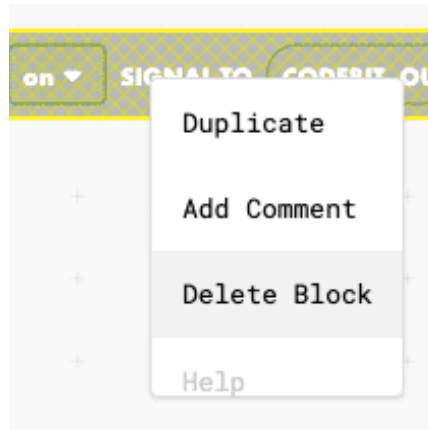
You can drag blocks to the left side of the screen or right-click on them to delete them.

The control at the bottom middle of the screen lets you select block programming or javascript programming for your codeBit.

Connecting Fuse to the codeBit

You will need to connect Fuse and the codeBit via a bluetooth connection in order to send your program to the codeBit.

1 Create your physical circuit with the codeBit and connect it to a power source.

2 Follow this video to connect your codeBit to the Fuse app and run your code.

3 The green LED will light up on your codeBit to indicate a successful connection. When Fuse is connected to your codeBit, you can also click the "Clear Code" button to remove the current program from your codeBit.

SUPPLEMENTAL RESOURCES

☐ Getting Started Lessons: https://classroom.littlebits.com/curriculum/steam-kit-core

☐ Support: https://support.sphero.com

☐ Community Forum: https://community.sphero.com/

☐ Contact Us: https://sphero.com/pages/contact-us