



PyBadge Case

Created by Ruiz Brothers



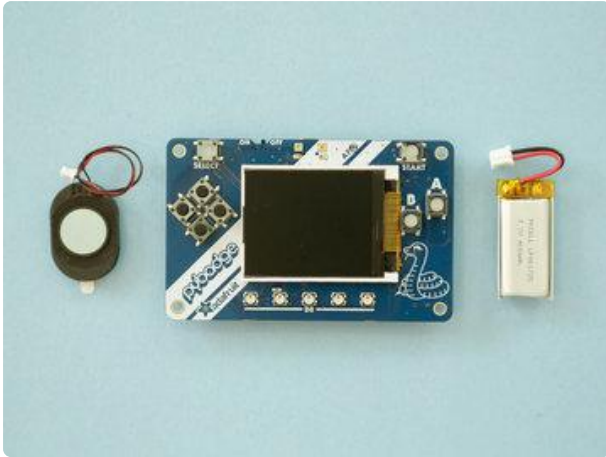
<https://learn.adafruit.com/pybadge-case>

Last updated on 2021-11-15 07:40:08 PM EST

Table of Contents

Overview	3
• PyBadge	3
• MakeCode Arcade	3
• MakeCode Arcade Guides	3
• Parts List	4
3D Printing	6
• 3D Printed Parts	6
• CAD Files	6
• Settings	7
• CURA Slicing	7
• Design Source Files	7
• Layer by Layer	7

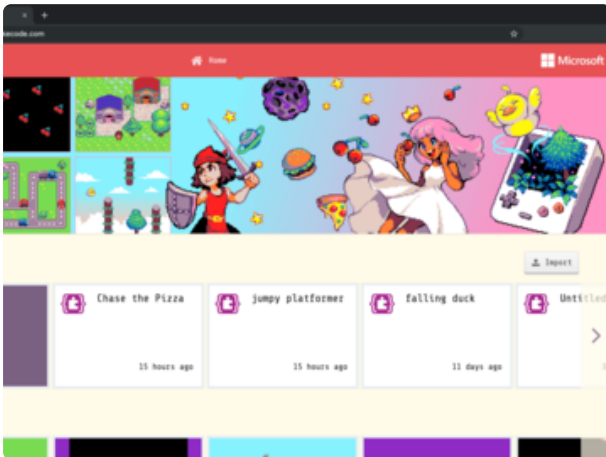
Overview



PyBadge

In this project we're making a case for the Adafruit PyBadge. This 3d printed case is designed for a lanyard so you can use it as a conference badge.

The case is 3d printed in translucent PLA and does not require any support material. A little actuator fits inside the case so you can easily trigger the reset button. The PCB press fits nicely and doesn't require any hardware screws. The top cover features cutouts for the display and all the buttons.



MakeCode Arcade

MakeCode Arcade is a block based editor for programming your own games. It's designed for beginners and features tutorials so you can customize them or build your own. The built-in tools like the sprite editor, let you easily create assets and animations.

The Adafruit PyBadge pairs with MakeCode so you can program and upload your games over USB. With MakeCode Arcade, you can build platforms, side-scrollers, shooters and puzzle type games.

MakeCode Arcade Guides

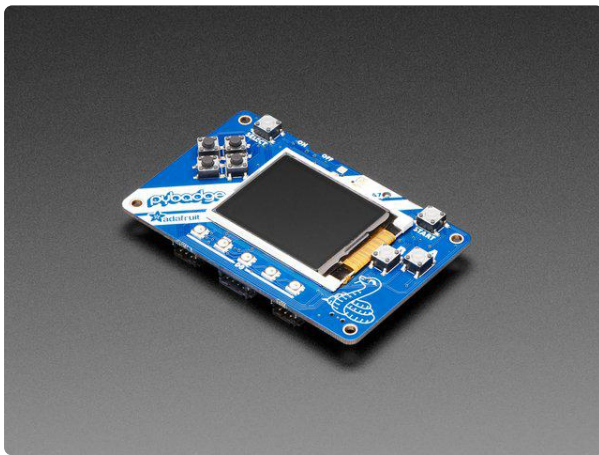
Use the learn guides linked below to get started with game development using Microsoft MakeCode Arcade.

- [Platformer Level Design \(https://adafru.it/EOj\)](https://adafru.it/EOj)
- [Pixel Animations \(https://adafru.it/EOk\)](https://adafru.it/EOk)
- [Pixel Art Sprites \(https://adafru.it/EOI\)](https://adafru.it/EOI)

Parts List

An easy to copy and paste list of parts used in this project.

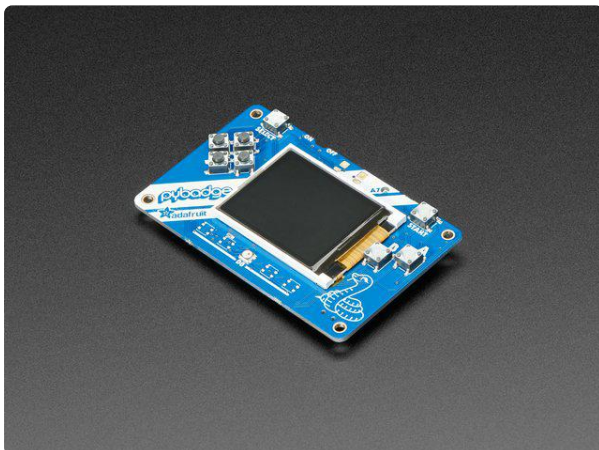
- [Adafruit PyBadge](https://adafru.it/EOM) (<https://adafru.it/EOM>)
- [Adafruit PyBadge LE](https://adafru.it/EON) (<https://adafru.it/EON>)
- [USB Cable with data lines](https://adafru.it/EOr) (<https://adafru.it/EOr>)
- [Lanyard with Circuit Playground characters](https://adafru.it/EOo) (<https://adafru.it/EOo>)
- [400mAh 3.7v lipo battery](https://adafru.it/D7i) (<https://adafru.it/D7i>)
- [Mini oval speaker](https://adafru.it/CEv) (<https://adafru.it/CEv>)
- [Inventor II 3D Printer](https://adafru.it/CF5) (<https://adafru.it/CF5>)
- [Filament for 3D Printers](https://adafru.it/enm) (<https://adafru.it/enm>)



[Adafruit PyBadge for MakeCode Arcade, CircuitPython, or Arduino](https://adafruit.com/product/4200)

What's the size of a credit card and can run CircuitPython, MakeCode Arcade or Arduino? That's right, its the Adafruit PyBadge! We wanted to see how much we...

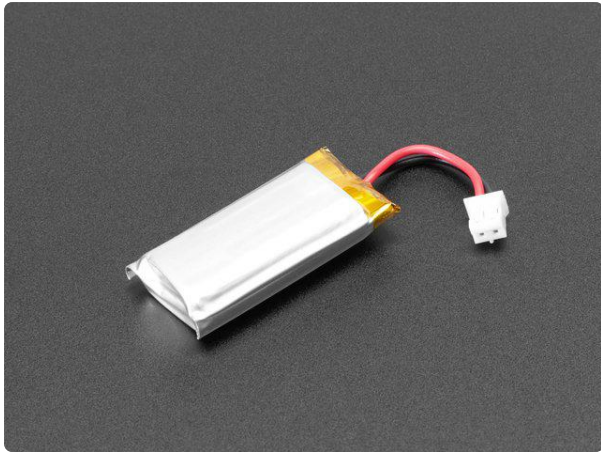
<https://www.adafruit.com/product/4200>



[Adafruit PyBadge LC - MakeCode Arcade, CircuitPython, or Arduino](https://adafruit.com/product/3939)

What's the size of a credit card and can run CircuitPython, MakeCode Arcade or Arduino even when you're on a budget? That's right, it's the Adafruit...

<https://www.adafruit.com/product/3939>



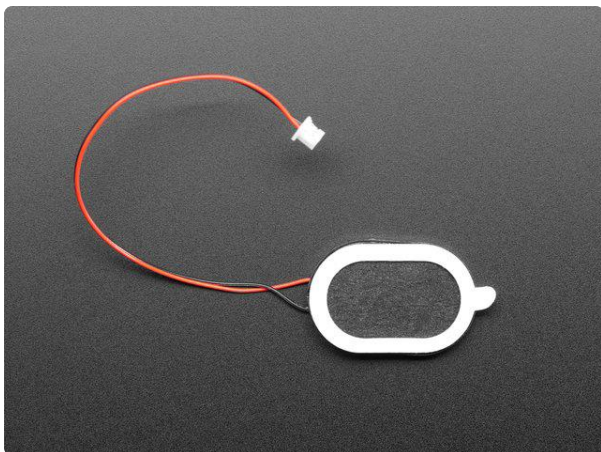
Lithium Ion Polymer Battery Ideal For Feathers - 3.7V 400mAh

Lithium-ion polymer (also known as 'lipo' or 'lipoly') batteries are thin, light, and powerful. The output ranges from 4.2V when completely charged to 3.7V. This...
<https://www.adafruit.com/product/3898>



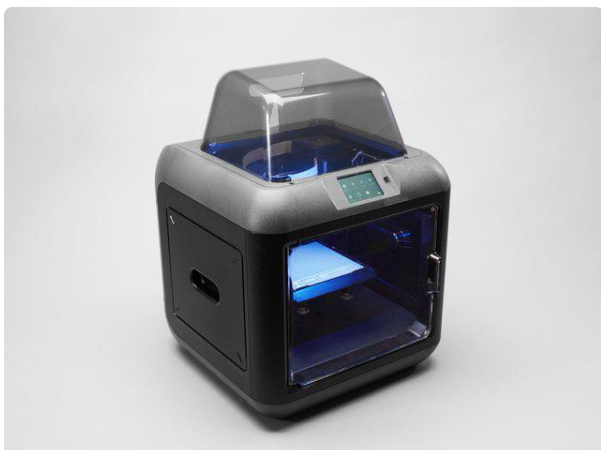
Adafruit Circuit Playground Lanyard

We've got our Circuit Playground friends on lunchboxes,
<https://www.adafruit.com/product/3987>



Mini Oval Speaker - 8 Ohm 1 Watt

Hear the good news! This wee speaker is a great addition to any audio project where you need 8 ohm impedance and 1W or less of power. We particularly like...
<https://www.adafruit.com/product/3923>



Monoprice Inventor II 3D Printer with Touchscreen and WiFi

The Monoprice Inventor II 3D Printer Touchscreen with WiFi is a perfect entry-level 3D printer with small footprint and reliable performance. It comes equipped with...
<https://www.adafruit.com/product/3897>

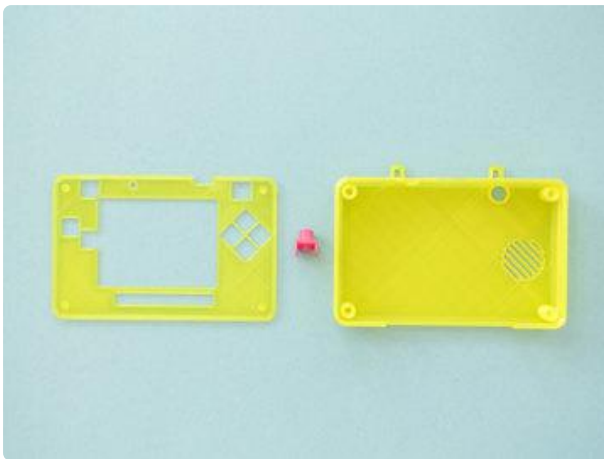


Filament for 3D Printers in Various Colors and Types

Having a 3D printer without filament is sort of like having a regular printer without paper or ink. And while a lot of printers come with some filament there's a good chance...

<https://www.adafruit.com/product/2080>

3D Printing



3D Printed Parts

The parts in this kit are designed to be 3D printed with FDM based machines. STL files are oriented to print "as is". Parts require tight tolerances that might need adjustment of slice settings. Reference the suggested settings below.

CAD Files

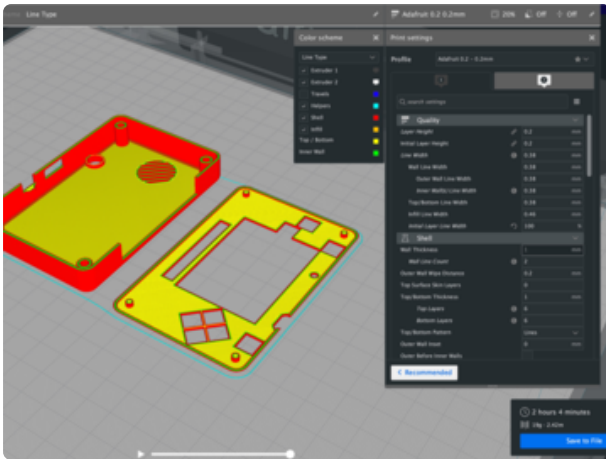
The fusion 360 source file is included and features original sketches and feature timeline along with easily editable user parameters. The parts can further be separated into small pieces for fitting on printers with smaller build volumes. Note: STEP file is included for other 3D surface modeling programs such as Onshape, Solidworks and Rhino.

Download CAD Files from GitHub

<https://adafru.it/EOs>

Download from Thingiverse

<https://adafru.it/EOp>



Settings

Use these settings as reference. Values listed were used in [Ultimaker's CURA 3.X \(https://adafru.it/C26\)](https://adafru.it/C26) slicing software.

- 0.2mm Layer Height / 0.4mm nozzle
- 0.38mm Line Width (inner & outer widths)
- 40mm/s printing speed
- 20% infill
- Supports: No

CURA Slicing

Parts were sliced using Ultimaker's CURA 4.x software and tested with an Ultimaker 3 and Flashforge Inventor II. The kit requires a minimum build volume of 150mm cubed. No support material is necessary for any of the parts. Double check parts are positioned in the center of the build plate before printing.

Design Source Files

The enclosure assembly was designed in Fusion 360. This can be downloaded in different formats like STEP, SAT and more. Electronic components like the board, displays, connectors and more can be downloaded from our [Fusion 360 CAD parts github repo \(https://adafru.it/AW8\)](https://adafru.it/AW8).

Adafruit CAD Parts on GitHub

<https://adafru.it/AW8>

Layer by Layer

Interested in CAD tutorials? Check out my [playlist on YouTube \(https://adafru.it/Ddm\)](https://adafru.it/Ddm) – There's over 100 of them! My personal favorite is the snap fit tutorial for cases and enclosures.

CAD Tutorials – YouTube Playlist

<https://adafru.it/Ddm>