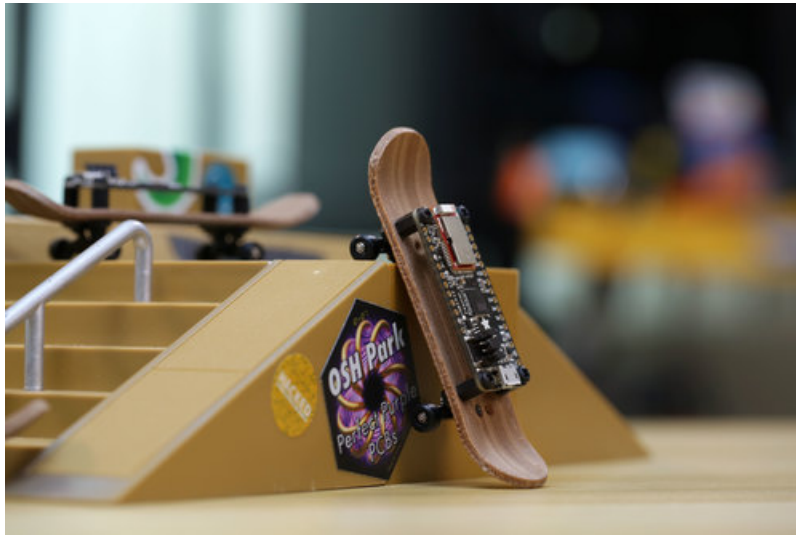


## Feather Fingerboard

Created by Ruiz Brothers



Last updated on 2018-08-22 04:01:25 PM UTC

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## Overview

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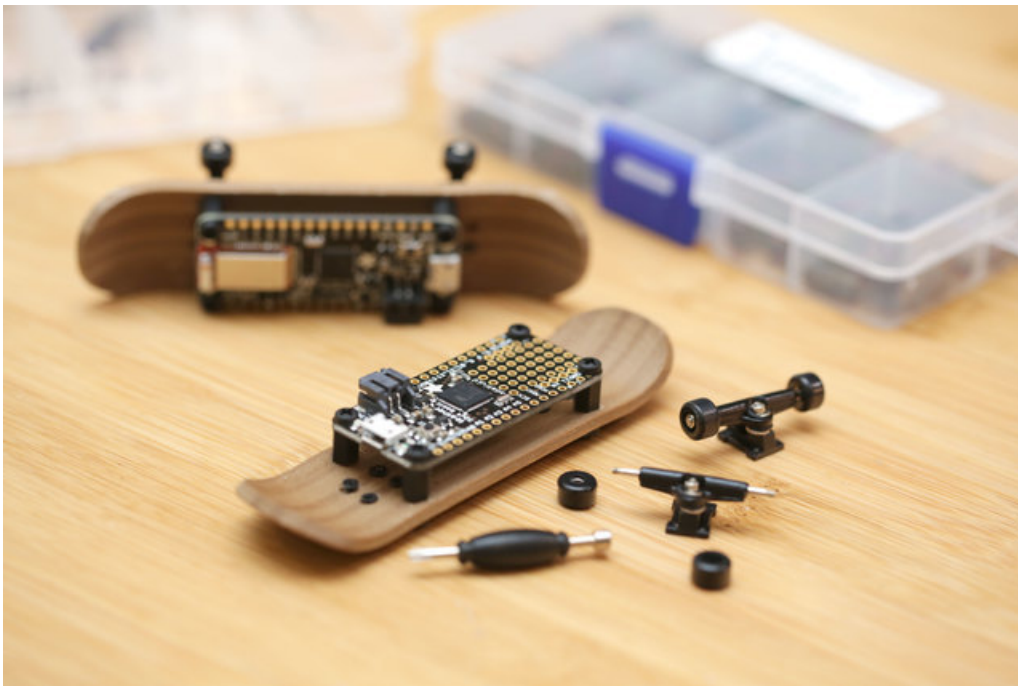
### Feather Boarding

This is a 3D printed fingerboard specifically designed for the Adafruit line of Feather boards. It's similar to a standard fingerboard but features special mounting holes for installing an Adafruit Feather. The deck was 3D printed using [ColorFabb's PLA/PHA bambooFill \(https://adafru.it/xub\)](https://adafru.it/xub). This material is 70% colorfabb PLA and 30% recycled wood fibers.

### Fingerboard History

From [Wikipedia \(https://adafru.it/xuc\)](https://adafru.it/xuc):

A fingerboard is a working replica (about 1:8 scaled) invented by Jaken Felts, of a skateboard that a person "rides" by replicating skateboarding maneuvers with their hand. The device itself is a scaled-down skateboard complete with moving wheels, graphics and trucks.[1] A fingerboard is commonly around 10 centimeters long, and can have a variety of widths going from 29 to 33 mm (or more). Skateboarding tricks may be performed using fingers instead of feet. Tricks done on a fingerboard are inspired by tricks done on real skateboards. Jaken Felts is widely credited as making the first fingerboard, and his skit in Powell-Peralta's "Future Primitive" video brought fingerboarding to the skateboarders of the world in the mid-1980s. Around the same time, he wrote an article on how to make fingerboards in TransWorld SKATEboarding magazine.[1]



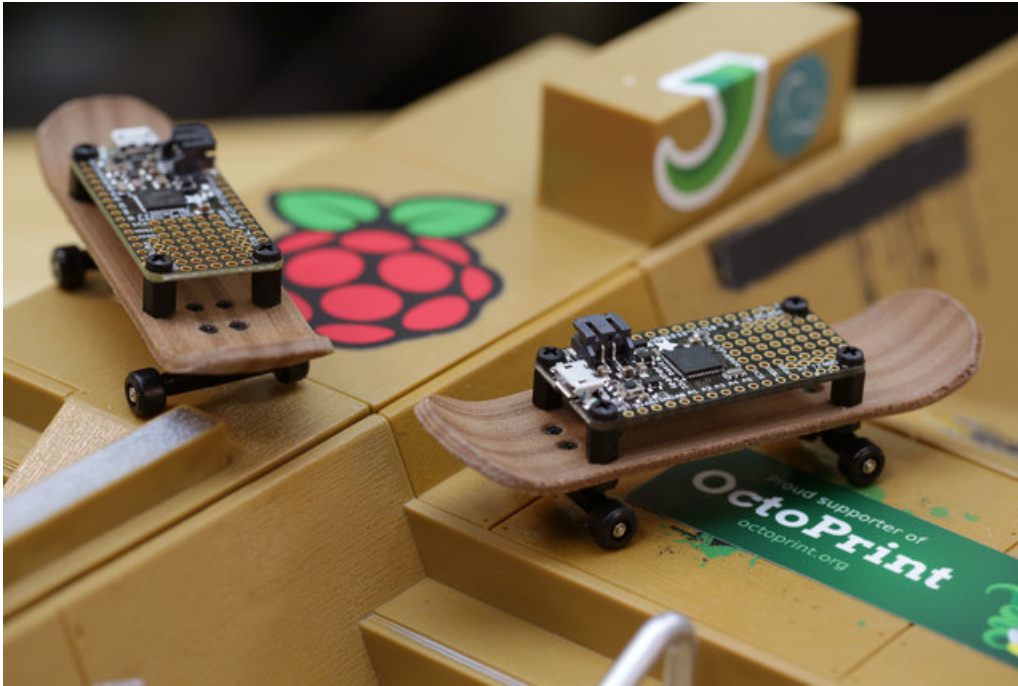
### Use & Performance

This is mostly for show, but this can be used for actual finger boarding. Although difficult, it is possible to land tricks. When the Adafruit Feather is mounted to the deck, the weight isn't exactly even so the balance is slightly off. The length of an Adafruit Feather is just about right for mounting on a standard fingerboard.

### Parts, Tools and Supplies

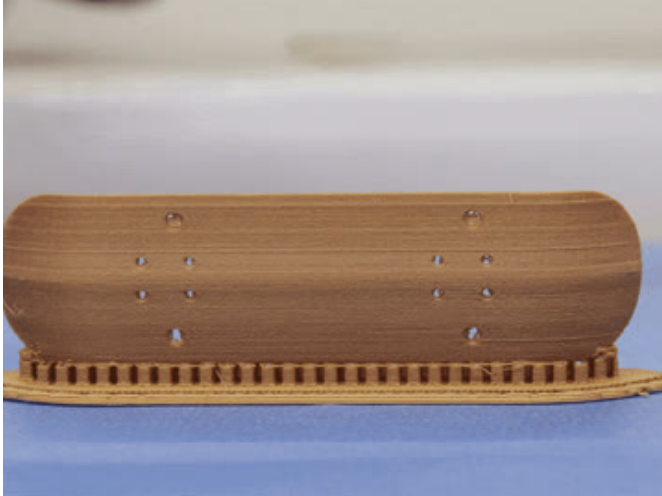
Here's a list of the parts needed to make this project.

- [Adafruit Feather \(https://adafru.it/vvD\)](https://adafru.it/vvD)
- [4x M2.5 3mm standoffs \(https://adafru.it/wsc\)](https://adafru.it/wsc)
- [4x M2.5 3mm machine screws \(https://adafru.it/wsc\)](https://adafru.it/wsc)
- 3D printer + filament
- [Screwdriver set \(https://adafru.it/diL\)](https://adafru.it/diL)
- [Fingerboard Trucks & Wheels \(https://adafru.it/xud\)](https://adafru.it/xud)



## 3D Printing

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### Wood Filament

Using wood infused materials can produce some pretty neat 3D printed parts. The surface feels coarse and slightly rough, but it can be sanded down to produce a slick and smooth surface. Brands of wood filament are different slightly from one another but most of them are mixed with PLA granulates.

### Slice Settings

Download the STL file and import it into your 3D printing slicing software. You'll need to adjust your settings accordingly if you're using material different than PLA.

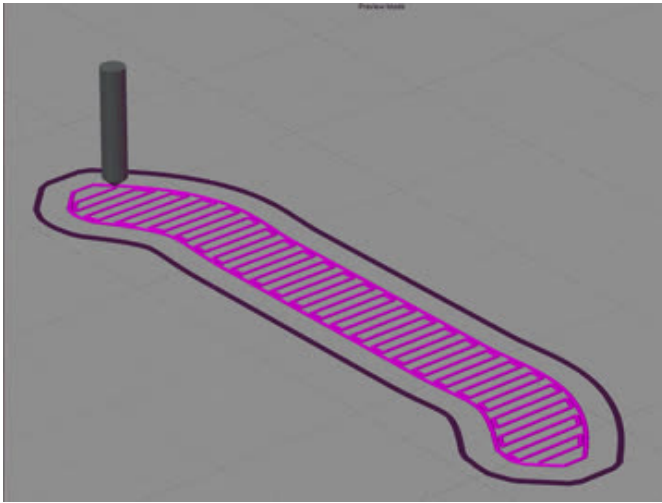
- 220C Extruder Temp
- No heated bed (65C for heated)
- 100% Extrusion Multiplier
- 0.48 Extrusion Width
- 20% infill
- Raft & Supports

### Support Settings

- Support Infill: 30%
- Extra Inflation Distance: 0mm
- Dense Support Layers: 0
- Horizontal Offset from part: 0.3mm

### Raft Settings

- Raft Layers: 3
- Raft Offset from part: 3.00
- Separation distance: 0.14mm
- Raft Infill: 85%



## Slicing Details

Here's a few tips and things to look for when slicing the deck and applying supports.

- Orient the deck vertically and ~3mm away from the bed. Rotate the deck so it's along the Y-axis.
- Generate automatic supports. Remove any support in the mounting holes.
- Preview the slice and step through each layer.



## Raft & Support

The Feather deck is printed best when it's oriented vertically on its side. This requires a raft and support material. A raft is used as a base and normally features thick lines for getting good bed adhesion. Support material is a series of thin strips that elevate the part away from the raft. It allows the print head to lay material on top of the support material.



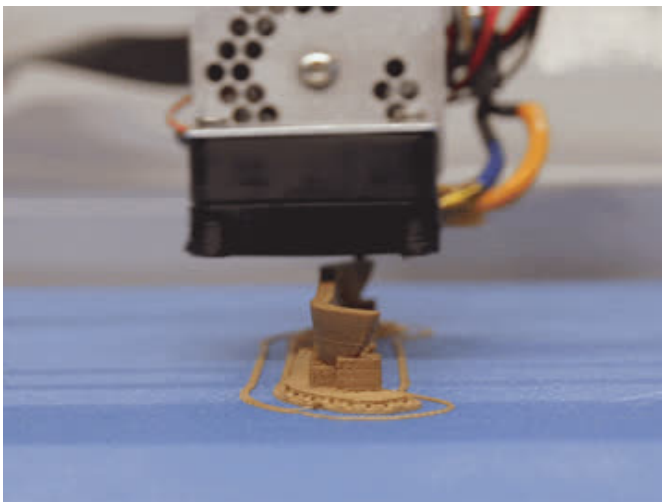
### Surface Finishing

You can optionally sand the surface down to create a silky smooth finish. Use a coarse low grit sandpaper to knock off the outer surface and then step up to a higher grit. After the surface has been sanded, the color will be lighter, almost white colored. You have several solutions you can use to bring the color back such as spray lacquer, linseed oil, and wood stains.



### Mounting Holes

Most of the mounting holes will need to be cleaned up. Use a pointy poking tool or a filing tool to clean up the mounting holes. I recommend filing both sides of each hole.



### Temperature & Colorations

You can actually alter the color of the material depending on how hot the nozzle is. The hotter the nozzle, the darker the color. Changing the temperature of the nozzle while printing can produce actually produce different colors.

## CAD Model

The deck was designed in Autodesk Fusion 360. You can download the source file and modify the design to make a custom board. The STL file is available to download if you want to print "as is" without any modifications.

<https://adafru.it/xue>

<https://adafru.it/xue>

<https://adafru.it/xuf>

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## Assembly

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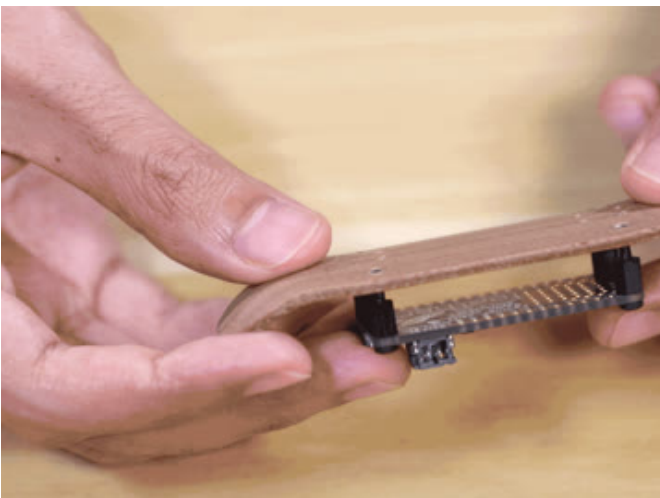
### Install Standoffs to Feather

I started by mounting the standoffs to the Feather board. You'll need four M2.5 standoffs (6mm long) and four M2.5 screws (4mm long). Our [screw and standoff set \(https://adafru.it/wsc\)](https://adafru.it/wsc) includes several standoffs, screws and nuts.



### Feather Standoffs

The standoff should be mounted onto the bottom of the Feather board. Insert and fasten a M2.5 screw onto the top of the Feather board while holding the standoff in place. Fasten tight. Repeat for each mounting hole.



### Deck Installation

The standoffs mounted to the Feather can now be installed onto the 3D printed deck. I lined up the screw threads with the holes in the deck and pressed them in.



### Install M2.5 Nuts

Now we need to secure the standoffs to the deck. Insert an M2.5 nut into each thread and fasten until tight.



### Remove Feather

Before we can mount the trucks to the deck, we'll need to remove the Feather from the standoffs. Currently, the Feather is over the mounting holes for the trucks, so we can't install them without removing the Feather board. Unfasten the four screws from the feather and leave the standoffs mounted to the deck.



### Deck Standoffs

I recommend leaving the standoffs a little loose – If they're tighten, it may be difficult to line up the holes with the Feather board. When they're loose, it's much easier because they can be adjusted.



### Install Wheels to Trucks

If you haven't already, install the wheels onto the trucks. The trucks I got came with one pair of wheels with accompanying hardware and tool. Fasten until tight.



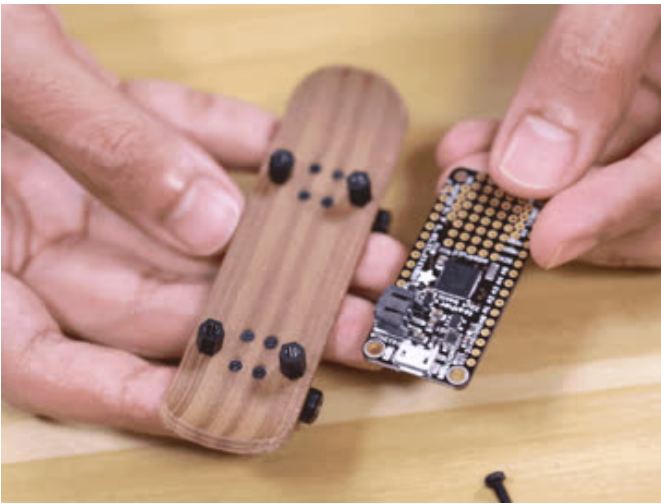
### Install Trucks

Now we can install the trucks onto the deck. I started by fastening the (micro-sized) machine screws into the deck, then place the trucks over the threads. Make sure the orientation is correct – The bushing should be facing inwards. Insert and fasten all four screws while holding the trucks in place.



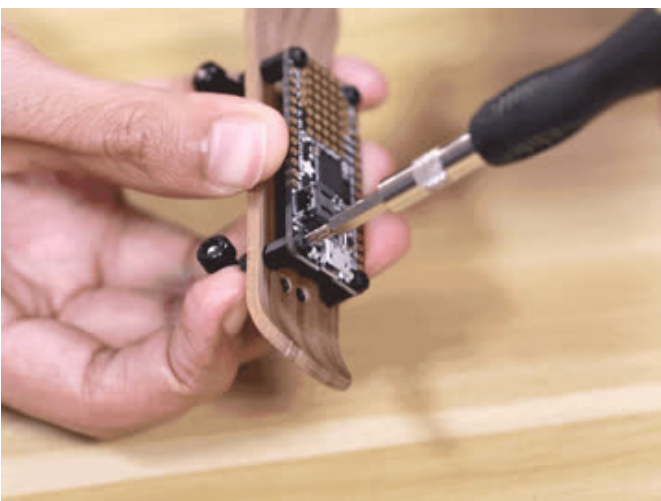
### Installed Trucks

Repeat this process for the second pair of trucks, again making sure the orientation is correct and the screws are fully tightened.



### Install Feather

Place the Feather back onto the standoffs and line up the mounting holes. Hold in place while inserting a M2.5 nylon screw from the top.



### Secure Feather to Deck

Insert and fasten all four M2.5 nylon screws into the mounting holes while holding the board in place. Fasten until fully tight.



### Fasten Standoffs

Now it's time to fully tighten the hex nuts that are underneath the deck. Hold the hex nut with your fingers while tightening the M2.5 nylon screw. Repeat this process for all four hex nuts.

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### Make, Modify, Share

Congratulations! You've built your very own Finger Board for an Adafruit Feather. Did you modify it? What are you using it for? Let us know! Tag @adafruit on your favorite social network and use hashtag #adafruit so we can find it! We love sharing project makes from the community on our social channels.

If you have any technical questions, please post them up on our [forums \(https://adafru.it/dYq\)](https://adafru.it/dYq), we have a dedicated team of support engineers who are there to help!