



3D Printing Troubleshooting Gaming Tokens

Lazlo Lazlo

VIEW IN BROWSER

updated 16. 1. 2023 | published 16. 1. 2023

Summary

Eight mini game tokens for board games based on the most common 3D Printing issues!



3.02 hrs



1 pcs



0.15 mm



0.40 mm



PLA



18 g



Prusa
MK3/S/S+

[Toys & Games](#) > [Board Games](#)

Tags: [actionfigures](#) [benchy](#) [calibrationtest](#) [games](#)
[gametokens](#) [miniatures](#) [monopoly](#) [token](#) [toys](#)
[troubleshooting](#)

I had a flash of inspiration last night! As I'm still learning to design and work my printer, I thought it'd be kinda funny to make tokens based on failed calibration tests, prints, and hardware. Since Monopoly has 8 tokens I decided to make 8 unique 3DP-Troubleshooting tokens!

I used a 30mm x 30mm x 20mm box as a rough limit for dimensions. So each 3DP Troubleshoot Token is very close to the size of the larger monopoly pieces.

Printing and Assembly

You can print everything at 0.15mm layer height. Supports help for the Layer Shift Cube and the Nozzle, but otherwise aren't needed.

A shiny filament works best (I used the Prusament Banana PLA filament).

Almost all the tokens are single-piece prints; only the Tangled Filament Spool has more than one (two to three depending on how you want to assemble it).

The Rundown

Thought it'd be cool to go over each token as each one (except for the Unfinished Benchy) gave me unique troubles. In general, I had to design the models to look like they experienced a given 3DP issue such as warping, layer shifting, and over-adhesion.

Unfinished Benchy

“Printer stopped in the middle of the print. What should I do?”

Yeah exactly what it says it is. I just took the stl from Creative Tools and chopped off a large portion of the top. I still haven't printed a regular benchy because I'm worried what it will say about my printer and subsequently my character.



Model courtesy of Creative Tools: <https://grabcad.com/library/3dbenchy-the-jolly-3d-printing-torture-test-1>

Layer-Shifted Calibration Cube

“It's been printing fine the past few months but suddenly it started printing away from the main print. What gives?”

I actually had this happen to me a couple weeks ago when making the Bandana for Waddle Dee. I thought the belts were too tight but turns out something got caught in the bearings and was grinding the steel rod (which I now need to replace :/). Tighten your belts and grease your bearings boys

This one was very fun to draw but I had to manually draw out the exposed infill pattern on the lower part of the cube. I used a Pattern function but my computer almost crashed trying to deal with all of the edges and vertices in the grid that I had to rotate first then extrude second.



Medium Well Nozzle?

“Bro when's the last time you changed this thing”

I haven't changed my burnt nozzle yet cause I don't know how to.

This one was kinda complicated since I had to use the E3D date sheet to model a v6 nozzle exactly. Then I doubled the size of the whole thing.

IMPORTANT: I thought it'd be fun to not design flaws into this model to give users a choice as both Brand New nozzles and Burnt Nozzles are common among beginner printers like me.

If you print the nozzle as is, you get this:



But feel free to actually destroy the thing to best represent a worn-down nozzle.

I took a blade to several of the corners, crushed it with pliers, and then I held the print up to a 230C nozzle and manually extruded some Black and Brown PETG onto the remaining nozzle. Looks awful but also a very good representation of a bad nozzle. So in other words pretty good!



PETG Pyramid with Glass Bed Chunk Attached

“Dude can you print PETG on glass? Asking for a friend”

I know this doesn't affect us Prusa users because we have the nice magnetic metal spring sheets, but I have heard horror stories of PETG prints adhering too strongly to glass beds and taking chunks of the plate off during removal. Thought it'd be nice to model such an instance for a game token.



Tangled Spool of Filament

"I swear they keep sending me tangled spools. " "You don't know anything, do you?"

By far the MOST DIFFICULT one I had designing. Sounds silly right? Just some cylinders and whatever. But I tried to get fancy and make a snap-fit mechanism that kept breaking due to the small dimensions of the latches. So I just had to revert to a regular press fit. I don't believe in super glue (), but I decided to include a loser Spool Lid just incase (emphasis on loser).

Has the option of having the Tangled Filament attached to Tangled Reel A or as a separate component that slides on. BTW it took me a while to get the Tangled Filament looking like actual tangled filament. Hope it's at least a bit convincing to you!



Vase with Enhanced Seams

“What are these bumps on the surface. Does anyone know??”

PrusaSlicer doesn't have an option for extra/prominent seams so I had to manually draw them in for almost 80 layers lol. Didn't want them too obnoxious, just enough to be present and ruin the appearance of the vase like regular seams <3



Warped Dodecahedron

“You call that first layer adhesion??”

This one was cute to make. Had to learn what a Dihedral angle is. Apparently for dodecahedrons it's like 116.56505 degrees or something. Manually curved up one of the base corners, then drew some asymmetrical lines that were extruded near the base and warp area.

This one looks kinda bad but that's the point.



Greasy Build Plate

“I swear I clean my build plate with ISO Alcohol before every print!”

“There's a slice of pizza on that printer”

One thing I notice all the time on reddit is that lots of people have really gross build plates.

I clean my build plate with ISO before and after every print. I learned the hard way that oils from your hands/face can stop plastics like PLA from adhering. (I once scratched my nose during a print and then went to wipe a scrap of plastic off the build plate. Left a bit of face oil and watched the melted plastic slide right over the splotch of oil on the build plate. Sorry if TMI.

So I thought it'd be cute to represent greasy build plates in a very literal sense. Some people's build plates are just as oily as arcade pizzas. Although arcade pizzas do taste good.



Conclusion

I hope you will give these prints a try. This was a lot of fun doing several quick designs that are all very different from one another.

Model files

 **3mf** 2 files

 **3dp-troubleshooting-game-tokens.3mf**
 All 8 tokens

 **3dbenchy.3mf**
 Just the benchy



stl

11 files



ls-calibration-cube.stl



nozzle-200.stl



pyramid-stuck-to-glass-bed.stl



tangled-reel-a-150.stl



tangled-reel-b-150.stl

This is a very tight fit so good luck



tangled-filament-150.stl

Just the "filament" that sits on the spool



tangled-reel-b-looser-150.stl

Haven't tested this but I know it's looser



tangled-reel-a-with-filament-150.stl



vase-with-enhanced-seams.stl



warped-dodecahedron.stl



greasy-build-plate.stl

Print files



3dp-troubleshooting-game-tokens_015mm_pla_mk3s_.gcode

PLA 0.40 mm 0.15 mm 3.02 hrs 18 g Prusa MK3/S/S+

License

This work is licensed under a
[Creative Commons \(4.0 International License\)](#)



Attribution-NonCommercial

- ✘ | Sharing without ATTRIBUTION
- ✔ | Remix Culture allowed
- ✘ | Commercial Use
- ✘ | Free Cultural Works
- ✘ | Meets Open Definition