

My Balsa & Glass Workshop

"The Cube" Puzzle Box

3D Print/Assembly Description

As of 8 September 2026

With Christmas 2026 fast approaching, I decided to start working on a new puzzle box for our Grandson August (Gus). After searching the web for many hours, I found just what I was looking for on makerworld.com. There I located a model by Zeko (BubblyEvil) called "**The Cube**" Puzzle Box shown in the images below. All **85** .STL files needed to print and build this model can be downloaded **free** from the makerworld.com webpage (<https://makerworld.com/en/models/946504-the-cube#profileId-921840>), and the Printables webpage (<https://www.printables.com/model/1075331-the-cube-by-bubblyevil/files>).



Source of Images: makerworld.com

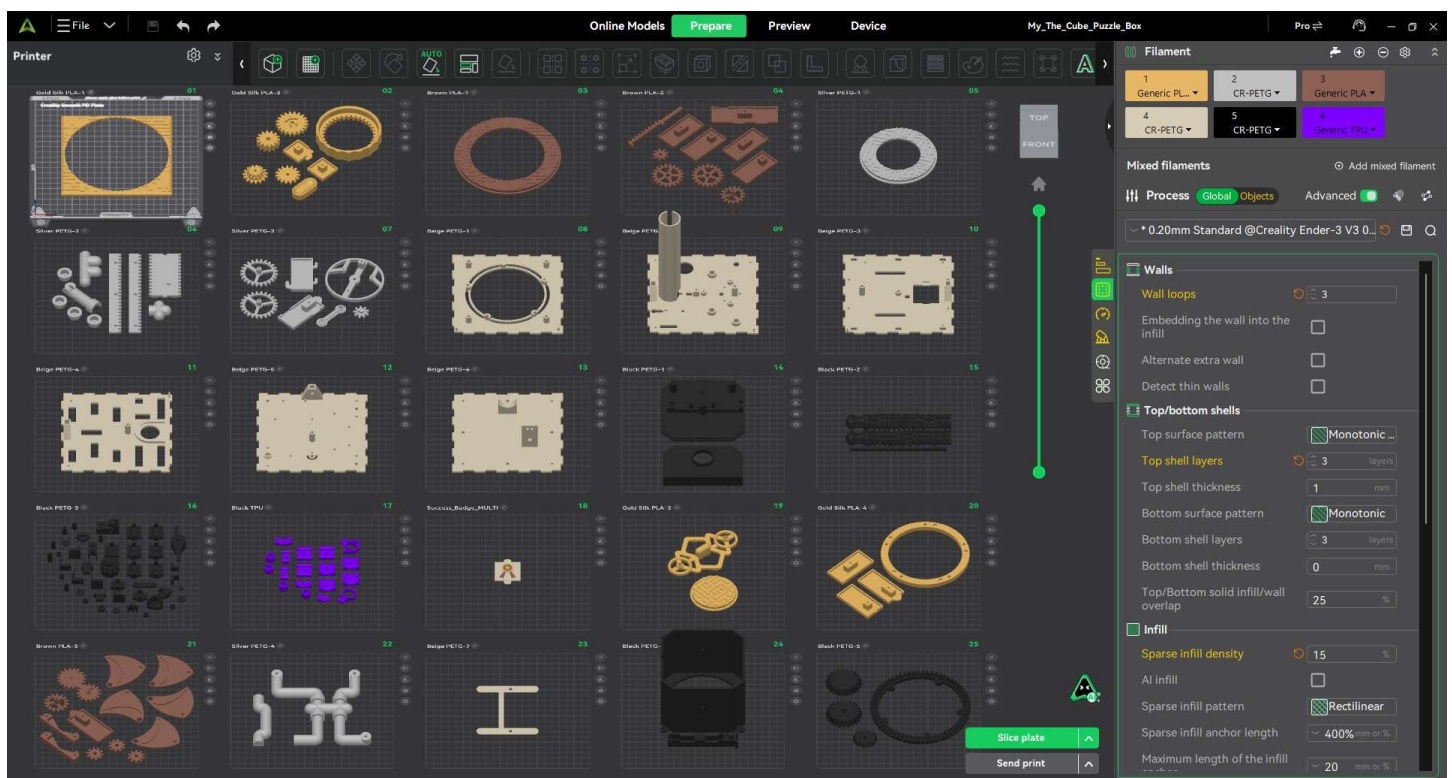
Explore the mystery of this Steampunk-style puzzle, designed to conceal secret treasures at its heart. This is the long lost containment box called "**The Cube**". It is known to have been specially crafted by an unknown author in order to prevent a very dangerous artifact from falling into the wrong hands. Since it has been recovered no one knows if the artifact is still present inside but very few people dare to open it. Not only might the content be risky, but **The Cube** also itself offers many challenges to whoever tries to open it.

According to the designer on his webpage (<https://bubblyevil.com/pages/thecube.html>), this model has: Difficulty Level: 2 out of 5; Solution time: ~60 min; # of tasks: 7 tasks; # of pieces: 289 (including all required hardware items); Printing time: ~106h; and Assembly time: ~8h.

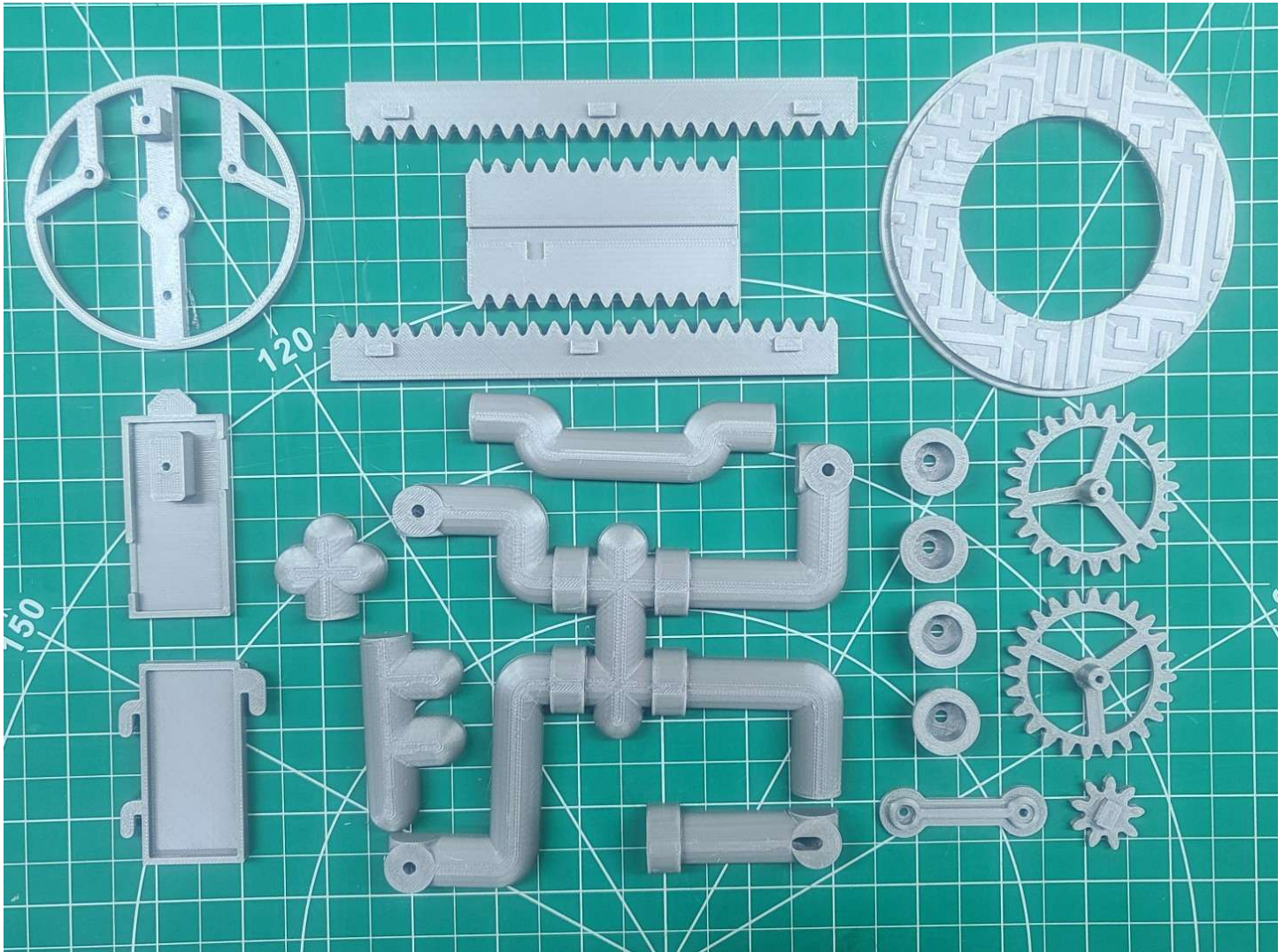
Along with all the STL files, there is a .3mf slicer file that can be downloaded. This file contains 18 plates with all the various STL parts already set up and ready for printing. The designer also provides a *very nice Assembly Guide* with detailed instructions, images, and a complete list of all hardware needed for assembly. And finally, there is a *Solutions Guide* for those of us that can't figure out how to solve the puzzle.

"The Cube" Puzzle Box 3D Printing

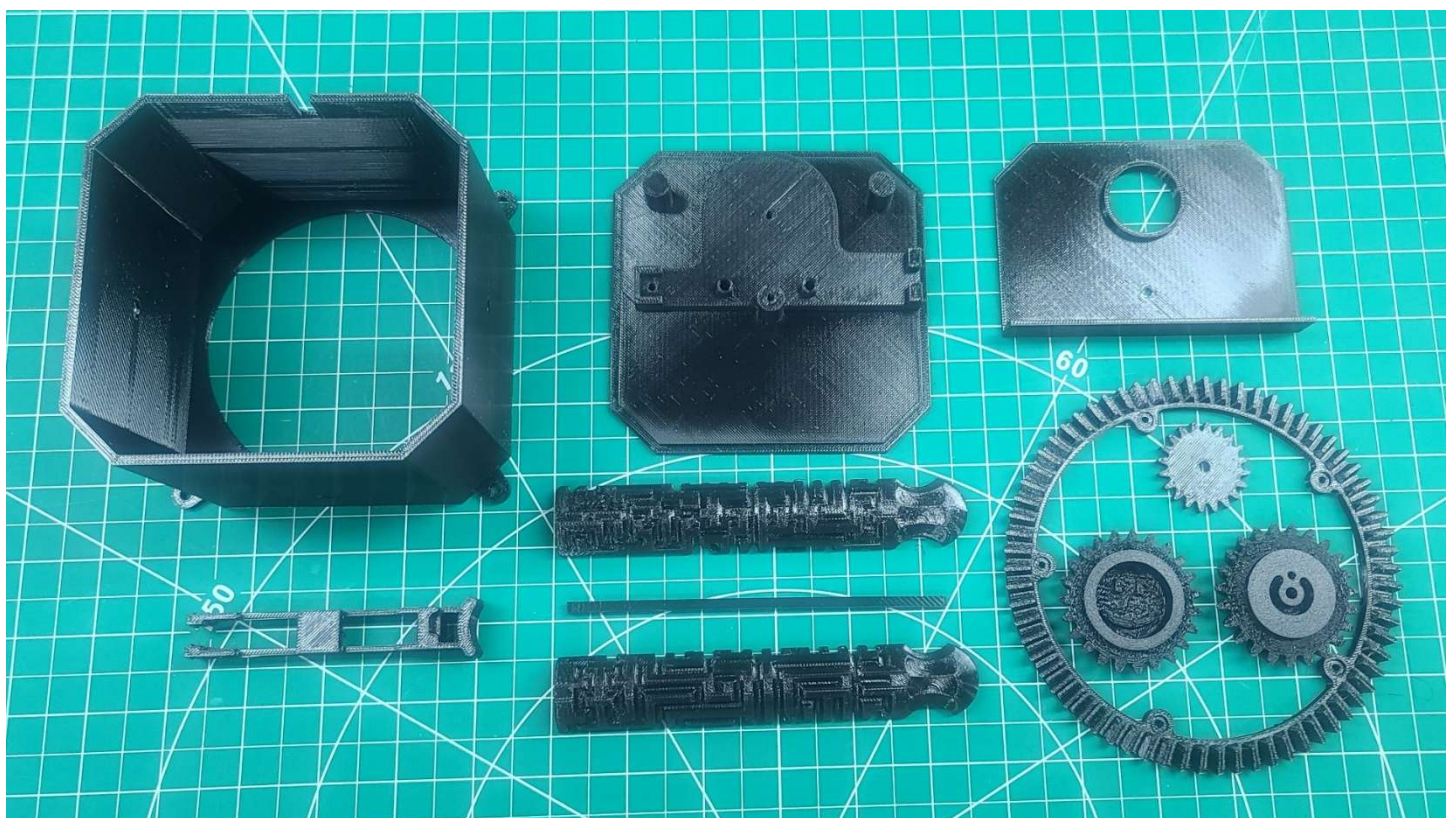
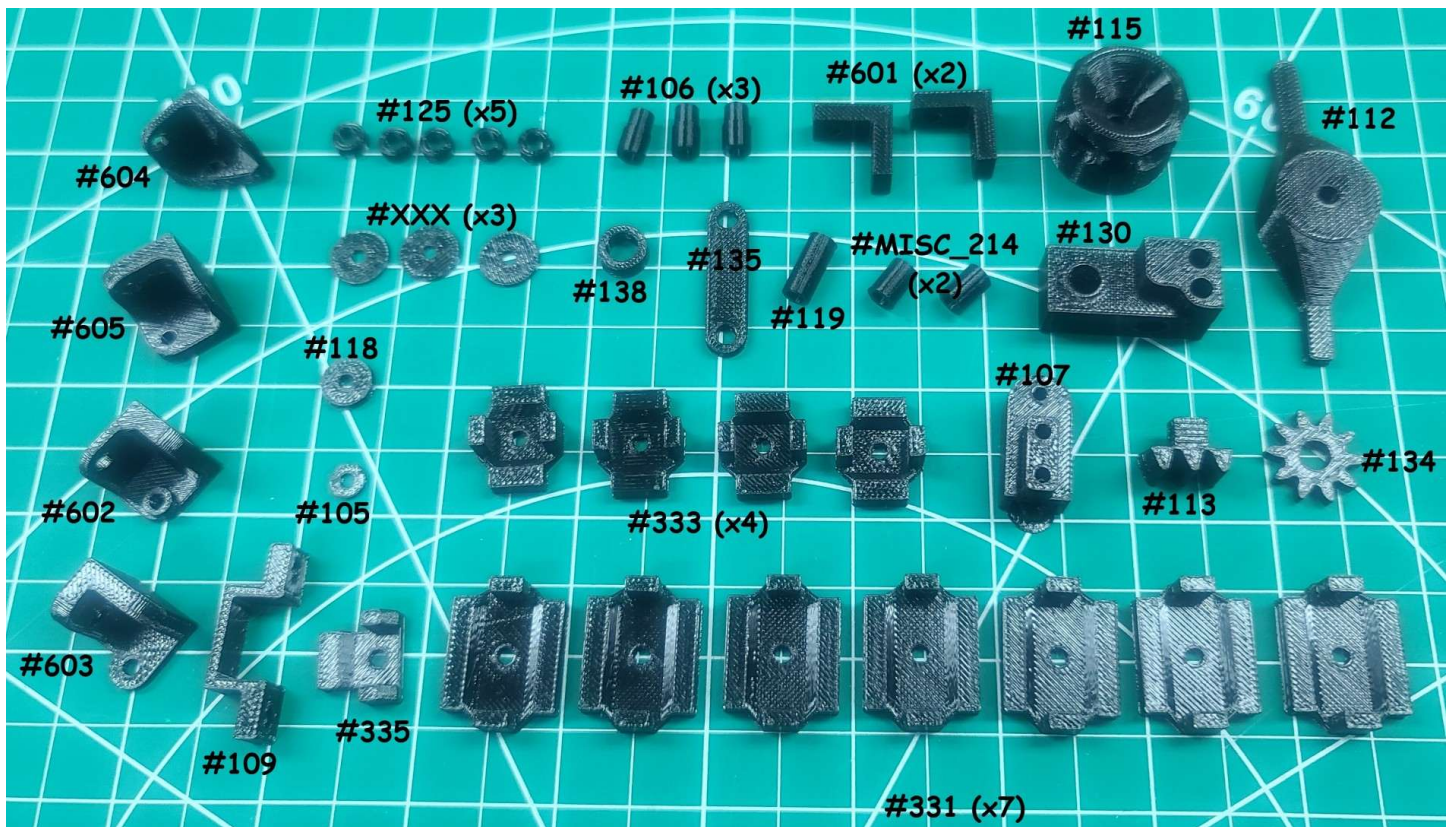
Starting with the designers .3mf file, I imported it into my Creality Print 7 slicer. Since the provided .3mf file was most likely developed for use with a Bamboo slicer & printer, the first thing I needed to do was to move some parts to new plates, because there were several plates with parts extending outside the boundaries of the 220mmx220mm build plate on my Ender-3 V3. With that complete I ended up having a total of 25 plates, using 5 different filament colors, and only one part (plate #18) requiring filament color changes during its printing. All the other parts in the model are a single color filament, so this should make printing fairly easy. My slicer plate and parts set-up are shown in the image below. While not easy to see in this image, *The Cube is a good size puzzle at 150x150x162.5 mm*.



I decided to start my 3D printing with a spool of **Silver** Geeetech PETG filament (https://www.amazon.com/dp/B0B6HRD88X?ref=ppx_yo2ov_dt_b_fed_asin_title&th=1). I set up my Creality Print slicer using a 0.4mm nozzle, 0.2mm layer height, 0.42mm layer width, with three wall loops using a "Classic" wall generator with Inner/Outer/Inner walls printing order, three top & bottom shell layers, 15% Rectangular sparse infill pattern, at a 200mm/s print speed, with "Organic Tree" support enabled, and Brims if needed. With PETG I use a 235 deg C nozzle print temp. and 70 degree C bed temp. After 6 hrs. 20 mins. and 139 grams of **Silver** filament used, all **20 parts** seen in the image below were finished.

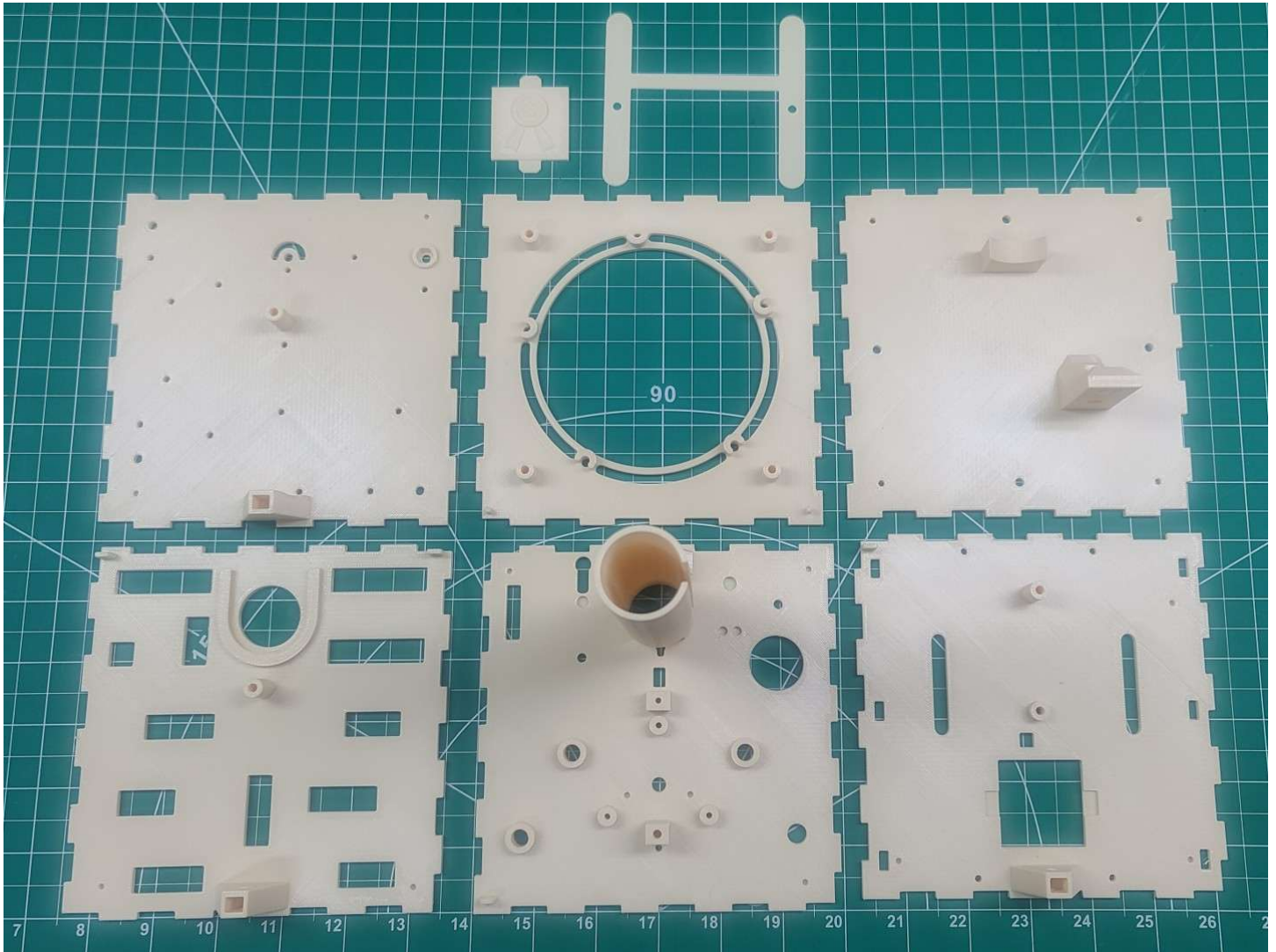


With the Silver parts finished, I loaded up a spool of **Black** Creality CR-PETG filament (https://www.amazon.com/dp/B0C8NP63GD?ref=ppx_yo2ov_dt_b_fed_asin_title&th=1), and then pressed forward with printing plates 14, 15, 16, 24, and 25. All these were printed using the same slicer setting as I used for the **Silver** parts. After 13 hrs. 25 mins. and 313 grams of **Black** filament used, all **54 parts** seen in the next two images below were finished. To help me keep track of what each of the **43 small parts** on plate #16 were during the assembly of the model, I made the effort to document them in the first image below. *Hope this helps you too.*

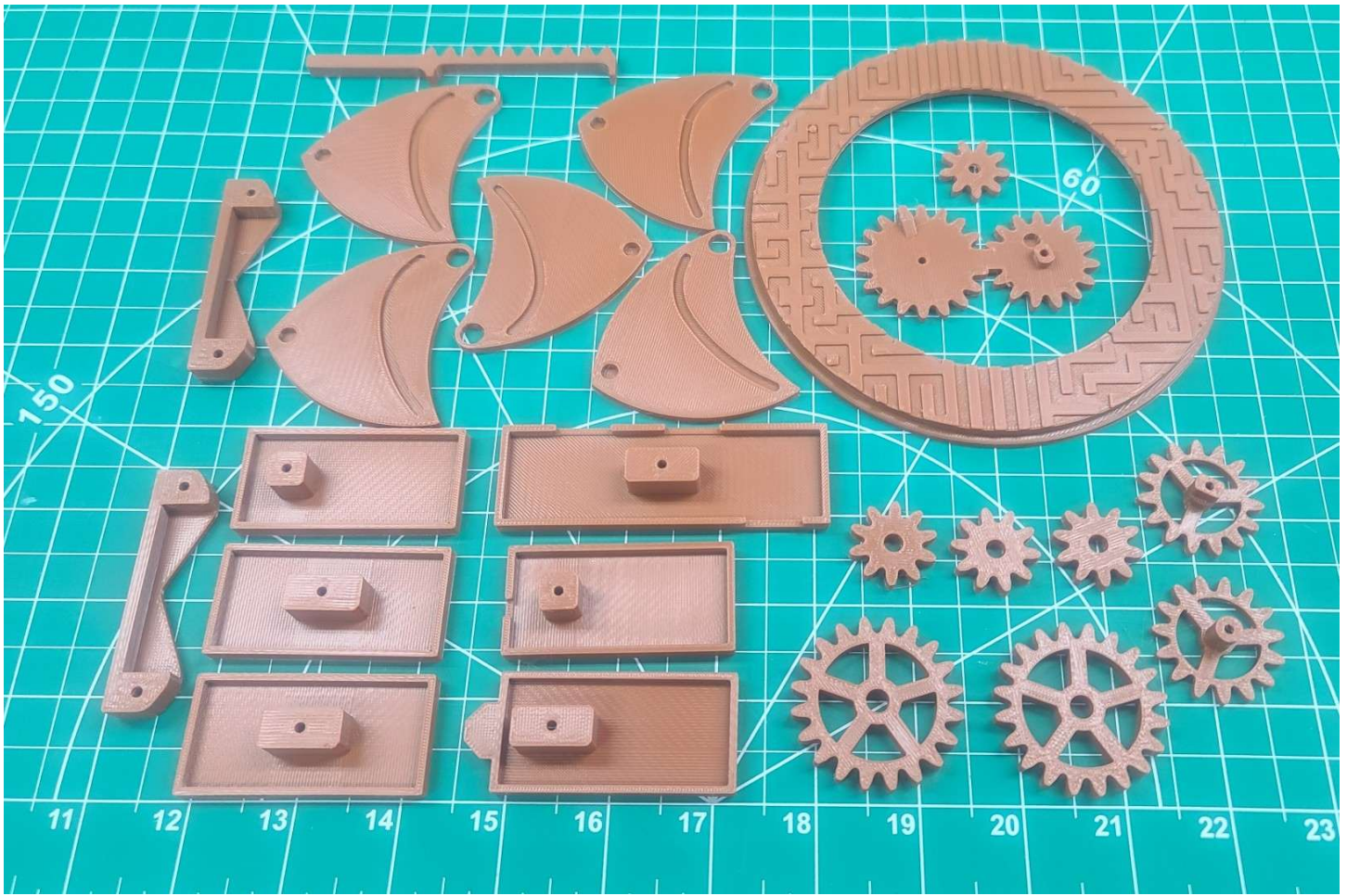


Next up was to print all the puzzle parts on plate #'s 8-13, 18, and 23. For these I loaded a spool of **Beige** Creality CR-PETG. **Note** - I decided to print plate #18 in a single color and then paint the other colors required on part #218. Again, all these were printed using the same slicer setting as I used for the

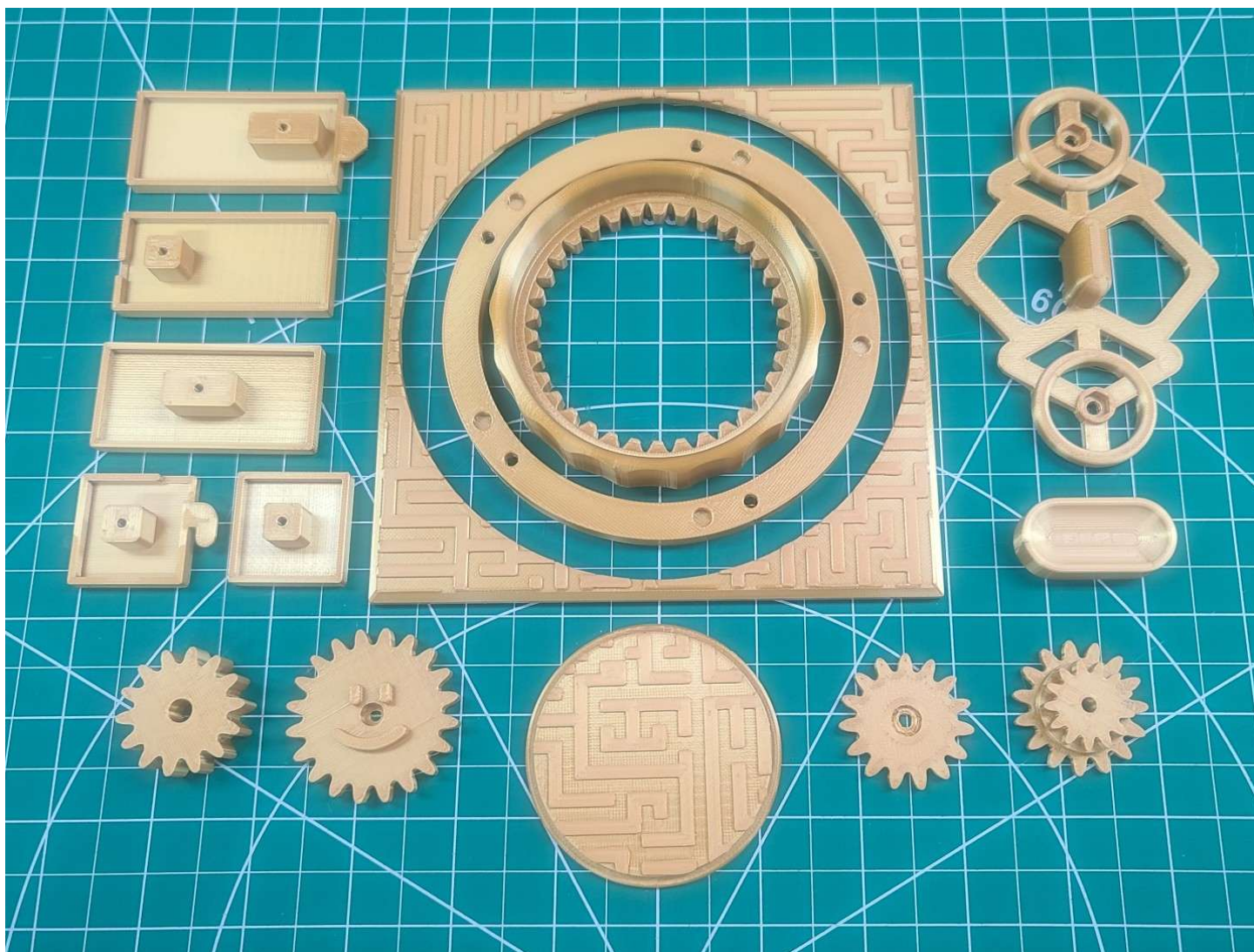
Silver & Black parts. After 12 hrs. 45 mins. and 323 grams of **Beige** filament used, all **eight parts** seen in the image below were finished.



With all the Beige plates finished, I swapped out that color with a spool of **Brown** Elegoo PLA in the filament dryer. Using the same slicer settings, I then printed plate #'s three, four, and twenty. After 4 hrs. 50 mins. and 137 grams of **Brown** filament used, the **24 parts** on these three plates can be seen in the image below.



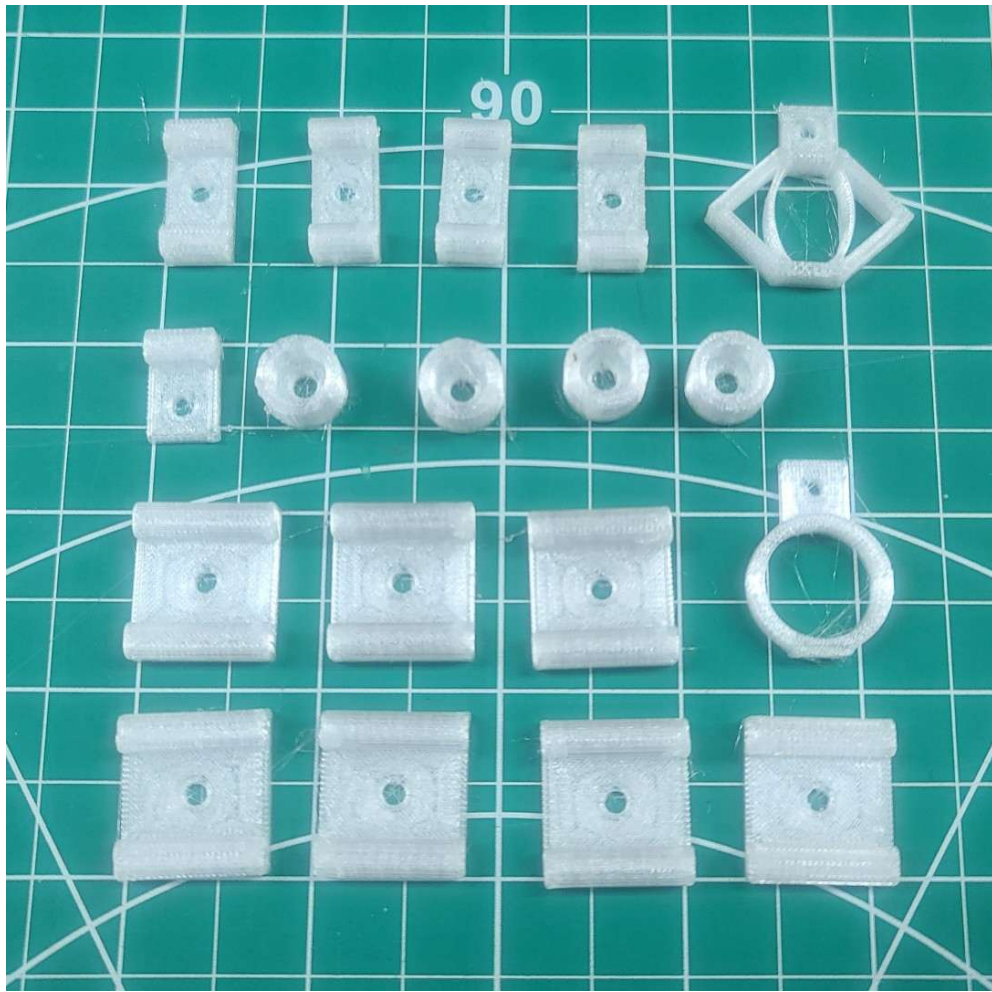
Alright, now for another filament color change which was a spool of **Gold** Giantarm Silk-PLA. I used this filament to print plate #'s one, two, 19, and 20. Because I was using Silk-PLA I had to reduce the print speed to **only 50mm/sec.**, along with the print temp. and build plate temp. changes made when selecting the "Silk-PLA filament" setting. After 9 hrs. 32 mins. and 140 grams of **Gold** filament used, all **15 parts** seen in the image below were finished.



Finally, the last filament color for plate #17, which is all the TPU parts. For this plate I purchased a new spool of **Transparent** Creality **HP-TPU**. This is a new product just offered from Creality which they claim: High flexibility / No clogging / High speed printing (30-120mm/sec) / High toughness / No warping / Consistent filament diameter / No deformation / Smooth molding / Improved efficiency of printing models / Stable and fall-resistant / More refined models. This filament has a Shore 95A hardness.

Given all that, I adjusted the print parameters in **My_The_Cube_Puzzle_Box.3mf** file to use this new TPU filament. Creality released a new filament profile for their HP-TPU, so I selected that in Creality Print. I then adjusted the print parameters to the following: 0.4mm nozzle, 0.2mm layer height, **0.32mm** layer width, with three wall loops using a "**Arachne**" wall generator, three top & bottom shell layers, **20% Gyroid** sparse infill pattern, at a **50mm/s** print speed, with No support enabled, and Brims if needed. Using the HP-TPU profile, this set a 215 deg C nozzle print temp. and 35 degree C bed temp.

After 1 hr. 34 mins. and 17 grams of **Transparent** Creality **HP-TPU** filament used, all **18 TPU parts** seen in the image below were finished.



With all the 3D printing finished, it was now time to start putting this interesting model together. Using the designers *very nice Assembly Guide*, the first thing I did was to gather together all the hardware listed in the "Full Bill of Material" table on page four. With that completed I started my model assembly with the *Front Panel* per pages seven through ten of the assembly manual.

Stay Tuned for More to Come!!