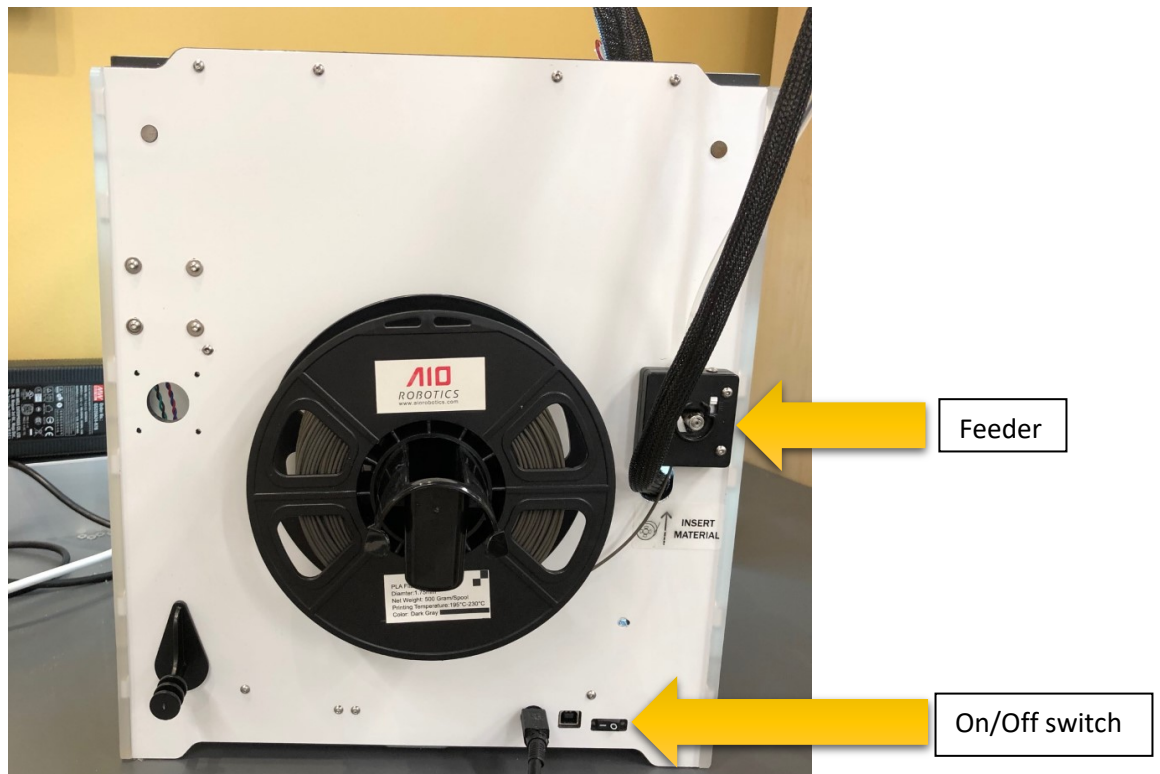
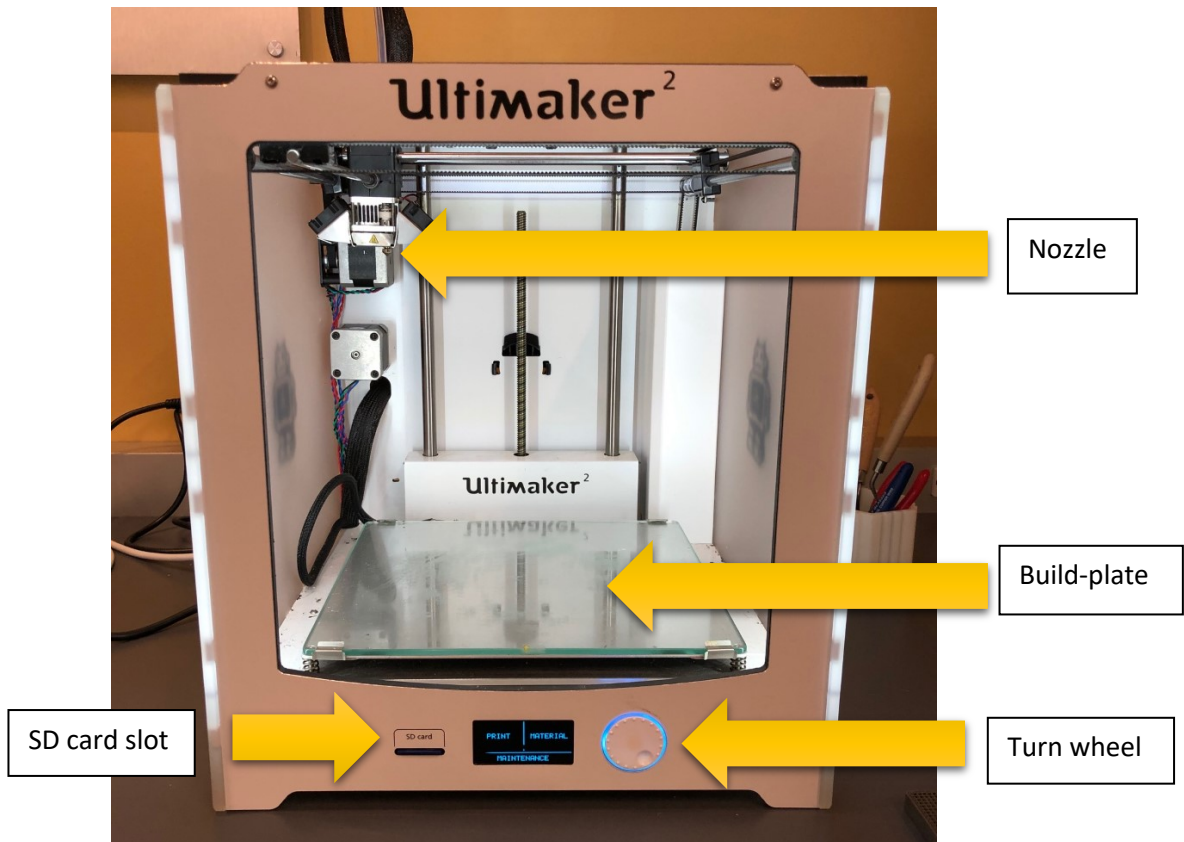
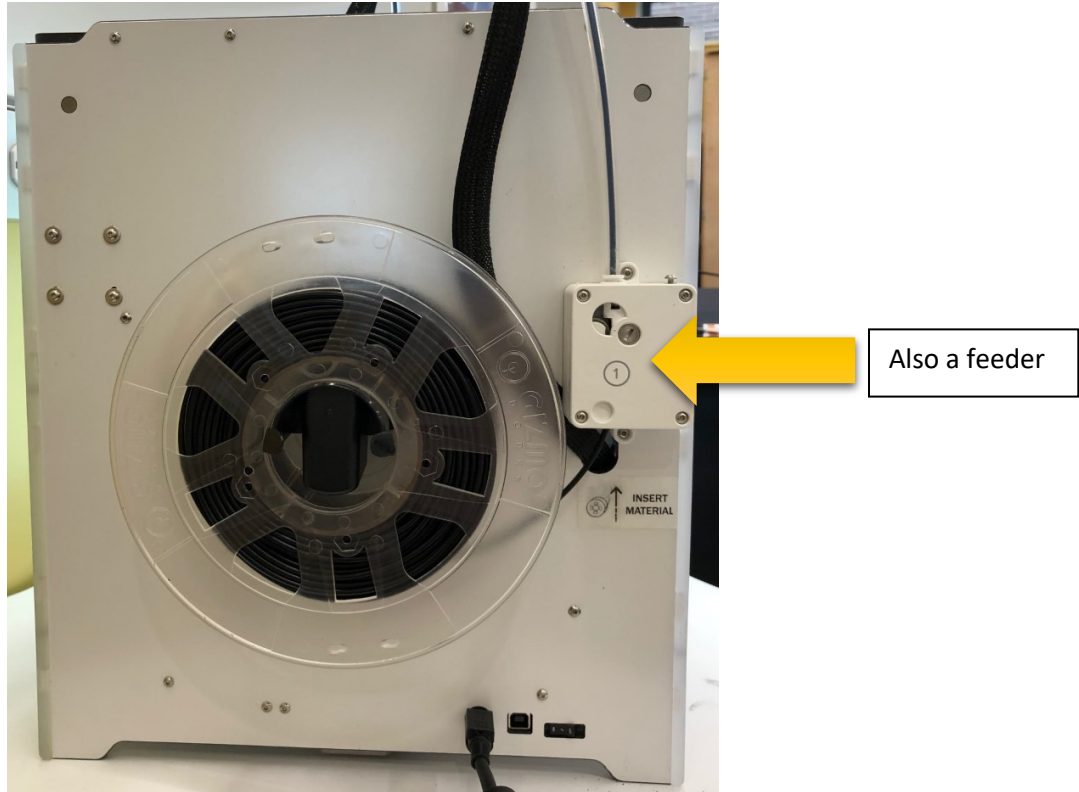


1. The Parts of a 3D Printer





2. Menus

- a. This is what you will see when you first turn on the printer.



- b. Clicking on "Print" will bring up a list of all of the printable files on the SD cards plus any folders on the SD card as well, which can be opened. Any compatible files found in there can be printed as well.

- c. Clicking on “Material” will bring up this menu:



- d. Clicking on “Change” will run you through the steps of switching out one spool of filament for another. “Settings” will let you adjust the printer so that it will print out the type of material you are currently using (both machines are already good to go, so you do not have to worry about this).
- e. Finally, “Maintenance” will bring up two different options:

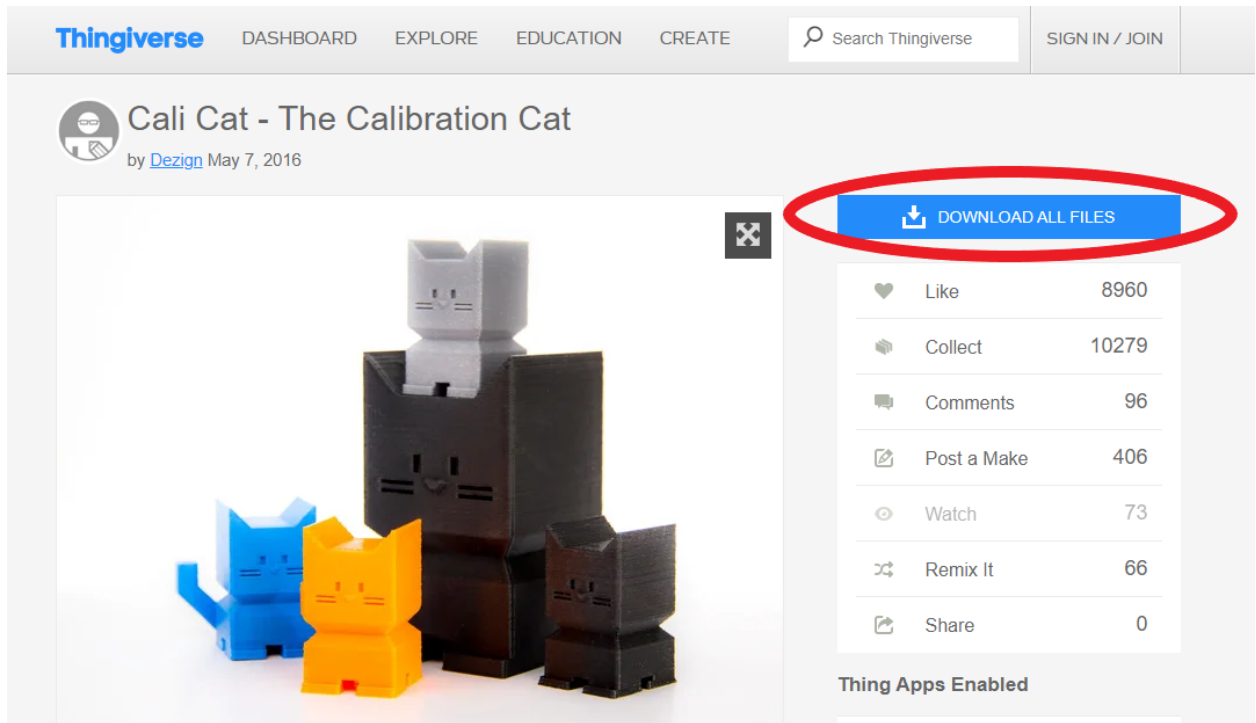


- f. “Build-plate” will allow you to calibrate the build plate and adjust how close it is to the nozzle during printing. I have not had to adjust this at all, but if your prints are not sticking to the build-plate that well, then I would mess with this setting.
- g. “Advanced” will bring up a bunch of different settings that can be adjusted as needed. The only ones that I have needed to use are “Insert material” and “Move material.”

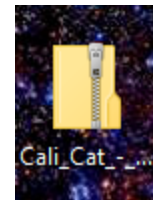


- h. “Insert material” basically acts like the “Change” option in “Material,” with the only difference being that the printer will not go through the process of removing already inserted filament. This is nice for when there is no filament in the printer already as it saves time.
 - i. “Move material” allows you to manually move the filament back and forth with the turn wheel. This is useful when there is filament stuck in the feeder or if you are having issues feeding the filament through all the way.
3. Preparing to Print
- a. Go to <https://ultimaker.com/software/ultimaker-cura> and download Ultimaker Cura to your desktop. Install the program.
 - b. Then, go to <https://www.thingiverse.com/> and find a project that you would like to print.

- c. Once you find a project that you want to print, click “Download All Files.” The download should start automatically. Save the file to your desktop.



- d. You will most likely see a file that looks like this:

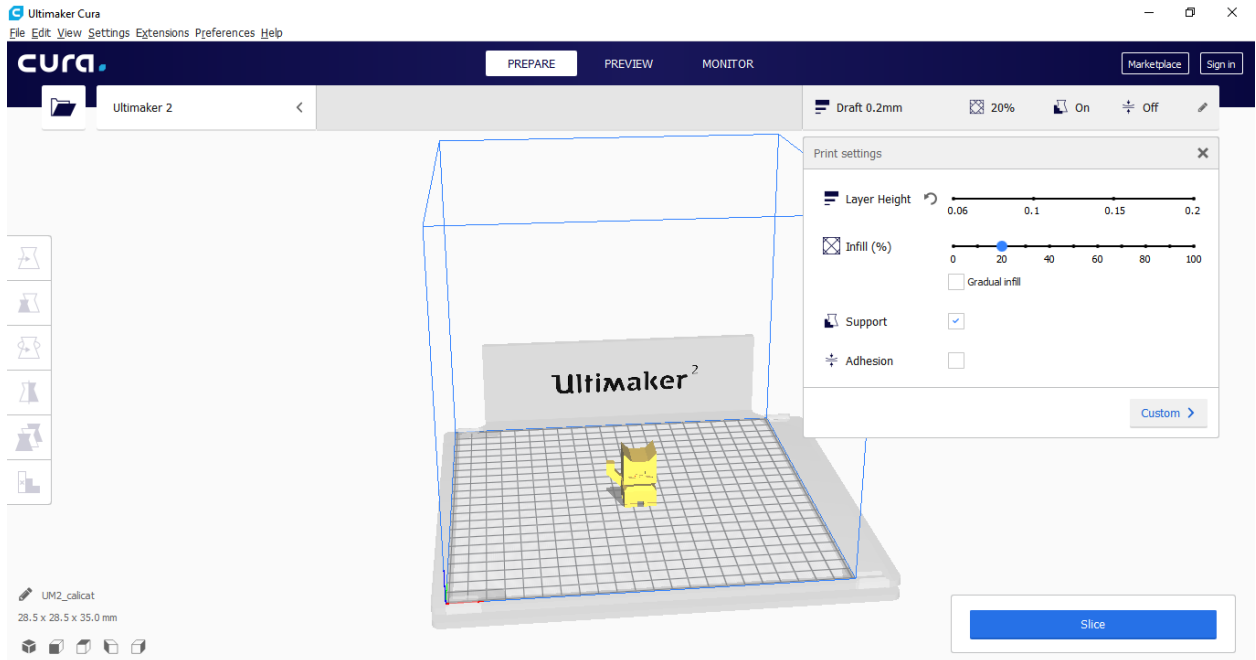


Right click this file and hit “Extract All...”

Choose where you want the file to extract to. For now, I would recommend the desktop.

- e. Double click on the extracted folder and find the STL model file. It is usually in a “files” folder. Some projects have multiple STL files.

- f. Double click on the STL file to open it in Ultimaker Cura. Sometimes the program takes a while to open. You might have to keep clicking on the file until the program opens.
- g. This is what you should see once Ultimaker Cura opens:



- h. For the settings on the right, I default to .2 layer height, infill 20, supports on, and no adhesion. If the Print Settings on the Thingiverse page of your print have other recommendations though, use those instead.

Contents

- Summary
- Print Settings

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<https://www.reddit.com/r/FixMyPrint>

Print Settings

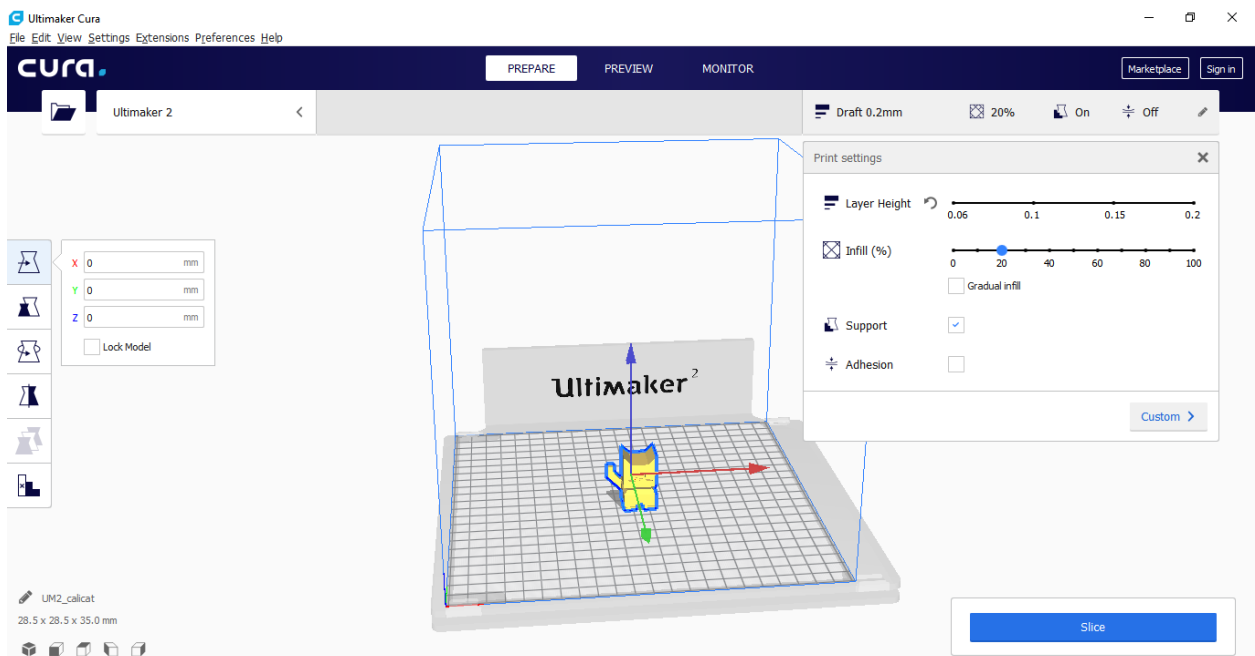
Rafts:
No

Supports:
No

Notes:
Cats sit perfectly on another cat's head of 2x the size.

More from 3D Printing Tests

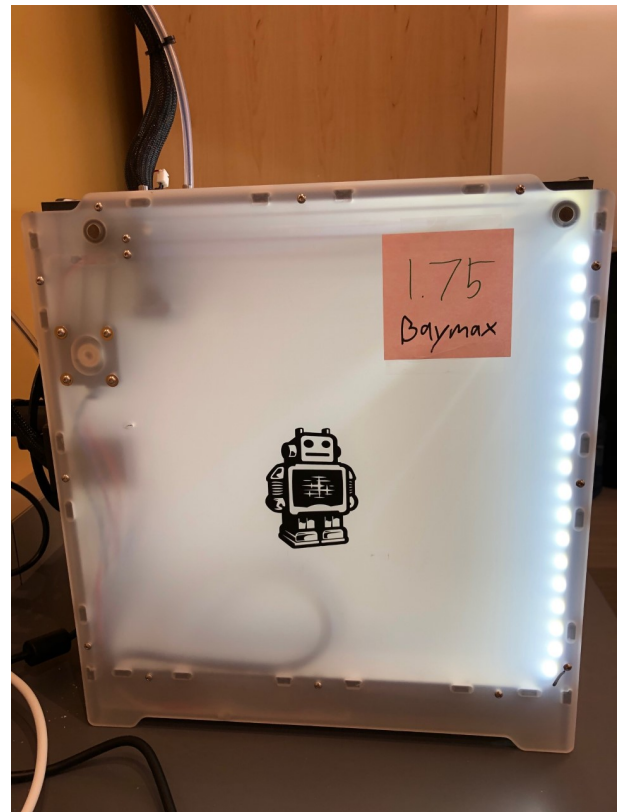
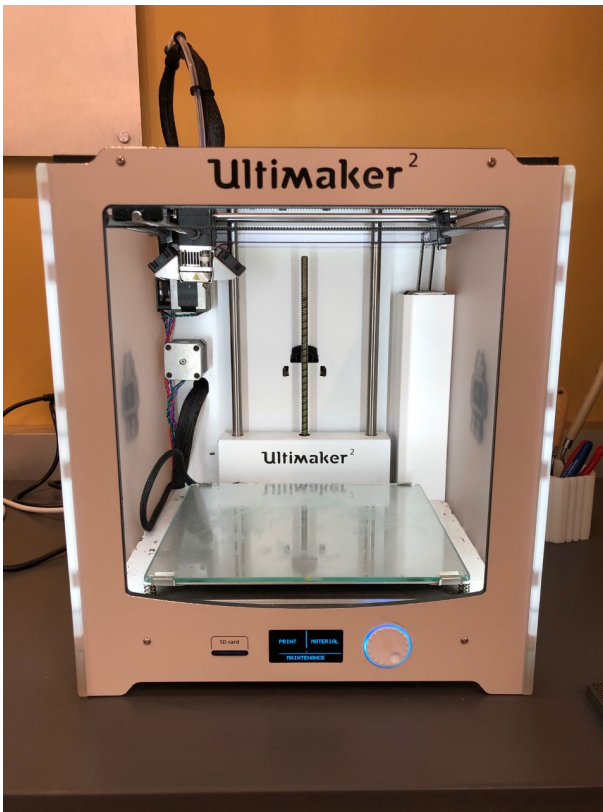
- i. Using your arrow keys, you can view the model from different angles. If you click on the model and use the icons on the left, you can change the size of the model, move it, rotate it, and flip it.



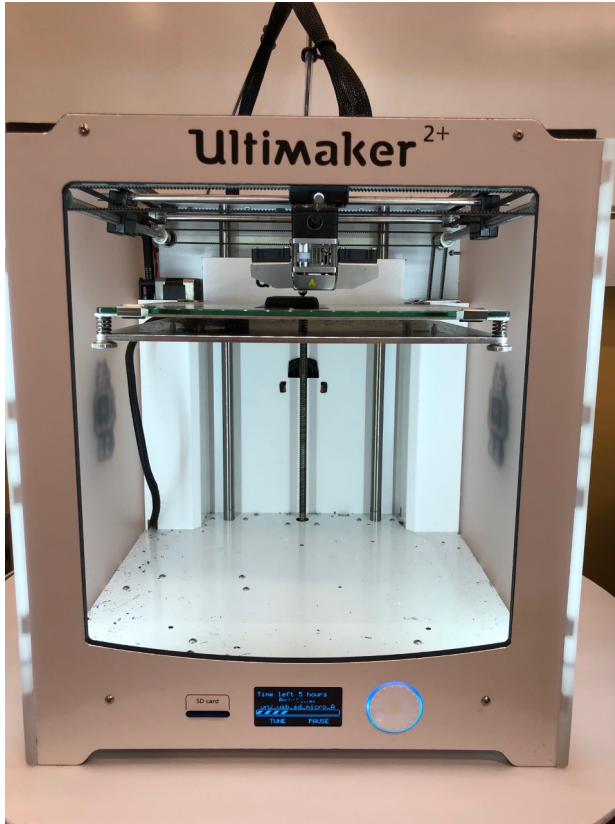
- j. Once you are done working with your model, hit the “Slice” button in the bottom right corner. Once the model is sliced, Ultimaker will tell you about how long it will take for the model to print. Then it will let you save it to your computer or an SD card if you have one inserted. If you save it to your computer, you will have to put it on an SD card at a later time before you print it (a sliced file is saved as a .gcode). The U-Imagine Center has SD cards that can be used to save models onto.

4. Printing

- a. Once you have your sliced file ready on an SD card, insert the SD card into the slot on either one of the two machines. Which machine you pick will determine what kind of filament you can use.
- b. “Baymax” is the machine that is located in the back of the U-Imagine Center and is an Ultimaker 2 printer. This machine is set to take 1.75 mm sized filament. Currently, the U-Imagine Center has all kinds of colors in this size, such as red, blue, green, purple, gray, white, black, orange, etc. If you want to print your model in color, I would use “Baymax.” **One word of caution though, the Ultimaker 2 machines do not natively support 1.75 mm filament, so the filament might get stuck or the nozzle could clog up on you. It has been running well for a while now, but if you run into any issues, try cleaning the nozzle or manually feeding the filament through the nozzle.**



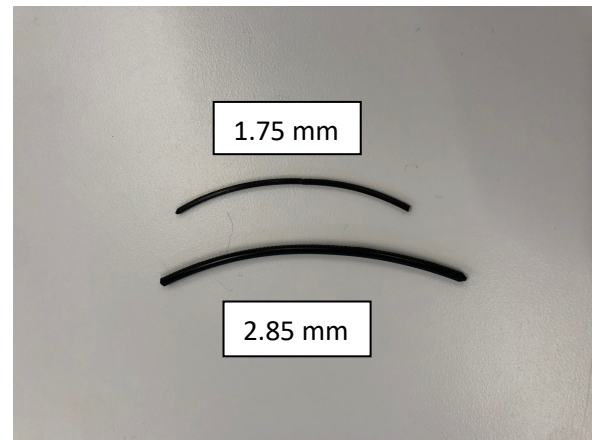
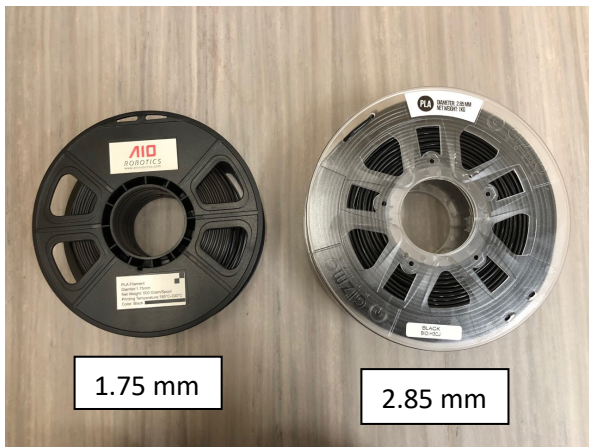
- c. “Octis” is the Ultimaker 2+ machine located near the front and to the left in the U-Imagine Center, though its location might change periodically. When in doubt, check the sticky note on the side of the machine or the front to see if it is a 2 or a 2+. This machine is set to take 2.85 mm sized filament. Currently, the U-Imagine Center only has this size filament in black and white. One advantage to using this machine is that since the Ultimaker 2s natively support 2.85 mm filament, you should not run into as many issues with these machines. However, if you want to use the white filament, you will have to manually cut it off a bigger spool and wrap it around a spool that will fit onto the back of the machine. There is an empty spool located with the rest of the filament that can be used for this.



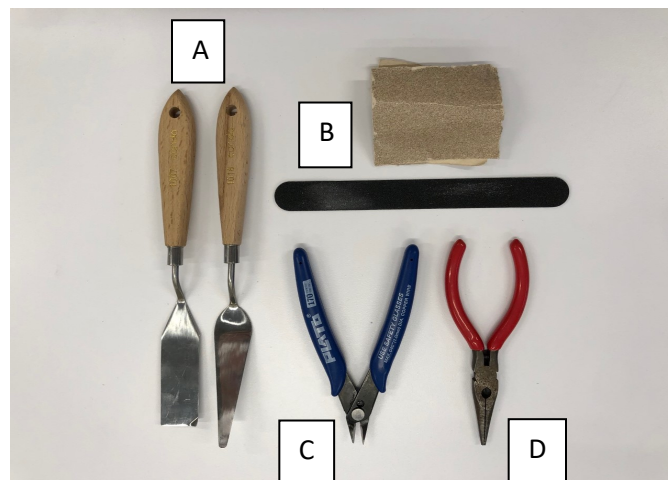
- d. All of the filament can be found in this clear tin in the top left hand corner of the U-Imagine Center.



- e. Each spool will say whether it is 1.75 mm or 2.85 mm, but here is a visual guide as well:



- f. Once your SD card and filament are inserted into the machine you want to use, turn the machine on and go to “Print.” From there, simply scroll through until you find the file you are looking for and select it. The machine will then warm up, which usually takes a few minutes. Once the machine is warmed up, it will start to extrude some filament in the bottom left hand corner of the build-plate.
- i. If it is not extruding any filament or a small amount of filament, try pushing the filament through the feeder in the back. If this does not work, you might have to stop the print by hitting “Tune” and then “Abort” to try it again. If that does not work, you will have to either reinsert the filament or do some troubleshooting.
- g. When it is done extruding in the bottom corner, the nozzle will then move to the center and start the actual print. Watch to make sure that the previously extruded filament does not stick to the nozzle and get carried over to the center.
- h. Now you wait. The time on your print might fluctuate a bit, so it might not get done right when it estimated it would. You do not have to wait in the U-Imagine Center the whole time; you can leave and come back. For longer prints, I would recommend checking in on it every once in a while to make sure it is still printing properly.
- i. When your print is done, the build-plate will lower back down and the printer will start to cool down. To remove your print from the build-plate, use one of the tools labeled “A” down below.



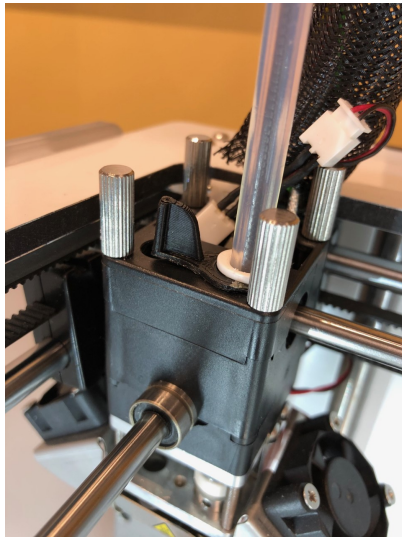
- j. The tools labeled “B” are used to sand down your project if needed, “C” is used to cut off any strings or other hanging off parts, and “D” is used to remove any supports. These tools are located in the back of the U-Imagine Center next to the 1.75 mm 3D printer.
- k. Congratulations! Your print is complete.



5. Troubleshooting and General Tips

- a. If you are having issues or need additional help, check out the Ultimaker 2 and 2+ manuals or their website: <https://ultimaker.com/en/resources/manuals/ultimaker-3d-printers>
- b. If you want to test the nozzle to see if it is clogged or not, there are small pieces of filament in the doors underneath the 1.75 mm printer that you can push through the nozzle by removing the clear tube.

To remove the clear tube, take off the black clip and then push down on the white circle.



- c. This area also has a holder for SD cards and other 3D printer tools as well.