3D Printer FAQ

Q: How do I submit a job for 3D Printing?

A: Save your 3D objects as an STL file on a USB flash drive and take it to the Library's Second Floor Adult Services desk.

Q: What is an STL file?

A: STL is short for STereoLithography. It is a standard file format for CAD (Computer-Added Design) software. STLs are a very compact file and only contain data on the dimensions of an object and nothing else.

Q: How big can an object be?

A: The printing area is roughly an 8x8x8 inch cube or around 200x200x200mm. (It is the same size as the default workplane in Tinkercad.)

Q: Can I print multiple objects at the same time?

A: Yes, while it is best to submit every object as a separate STL file, multiple STL files can be loaded on the same print job. The more objects you try to print the greater chance for errors. (Staff will advise.)

Q: How much can I print at one time?

A: You can submit a maximum of 5 jobs at a time. Each job can potentially be made up of multiple STL files. The more objects you try to print at the same time the greater the chance for errors. (Staff will advise.)

Q: Mechanical Stock vs. Art Stock

A: The difference between the two settings is that the layer thickness for Art Stock is half that of Mechanical. Mechanical prints twice as fast, has a lower chance for errors, but the layers are more easily seen on curved surfaces. Art Stock prints out twice as slow, has a greater chance of errors, but the layers are much smoother.

Q: How large can a file be?

A: The slicing program can, **IN THEORY,** handle sizes up to a maximum of 10Mb/10,000kB of STL files per job. The larger the file the higher chances of error and/or causing the 3D printer's computer to crash. Example: a 10 kB STL file sliced at Mechanical Stock Settings with 20% infill becomes a 4640 kb GCODE. While the same STL sliced at ART Stock Settings at 20% becomes a 8768kB GCODE. Most STL files are less than 1000kB.

Q: What is a GCODE?

A: GCODE stands for G Programing Language and is a commonly used file format for computer automated manufacturing machines such as 3D printers. GCODEs contain the instructions for how the 3D printer must move in order to construct a 3D object. STL are turned into a GCODE by using a slicing program such as KISSlicer.

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Q: What density of infill should I use for printing my object?

A: Each object is different and staff will advise. Generally 20% is standard and is a good mix of economy and strength. 10% is weaker, but cheaper, and is best used for boxy or display only projects. 33% is very strong, but pricier, and is best used for object that will see some stress and wear-and-tear. (Most of the plastic parts inside of the 3D printer are 3D printed at 33%.)

Q: Can I Print at a density higher than 33%?

A: While you can print up to 100%, it is generally never necessary and massively increases the cost.

Q: Can I print gun parts, knives, etc.

A: NO! If we even slightly suspect we are printing a weapon, or parts of a larger weapon, we will cancel the job, and destroy the object if it has already started printing. Continued submission of jobs that violate our policies can result in a ban from using C-tech materials.

Q: What about models or toy weapons?

A: We evaluate on a case by case basis. For instance we have allowed people to print prop Science fiction ray guns that were solid and in no way could be used as an actual weapon casing.

A: We have also canceled a job where a patron was printing a model sword for a figurine. Even though it was small, it still could have been used as a knife.