

Snapmaker Policy

(3D Print & Laser Cutting)

Purpose:

In keeping with our Mission to *promote....the excitement of discovery* the Green Forest Public Library strives to offer community access to new and emerging technologies such as 3D printers and laser cutters/engravers. This policy establishes how and under what circumstances the public may use the Library's Snapmaker Machine.

Who can print things with the library's 3D Printer, or use the Laser Engraver?

All patrons of Carroll and Madison Library System with cards in good standing may submit files to Print or Cut/Engrave.

Indemnification

By using the Library's 3D printing, Laser engraving, or cutting services, you agree to release from, indemnify, and hold harmless the Green Forest Public Library, its officers, employees, board members, agents, and representatives from and against any and all suits, claims, damages, losses, expenses (including reasonable attorney's fees), settlements, and judgments arising out of or relating to your 3D model or laser cut/engraved objects, including, without limitation, any claims for personal injury and infringement or misappropriation of any copyright, trademark, or patent.

Disclaimer of Liability and Warranty

By using the Library's 3D printing, laser engraving and cutting services, you agree to assume the risk of, and acknowledge that the Green Forest Public Library disclaims all liability for, any and all injuries (including death) resulting from use of 3D models or cut/engraved created using equipment owned by the Library. You also agree that 3D models and laser cut/engraved objects possess certain inherent weaknesses and limitations and may not be suitable for all applications, including, without limitation, those for which they are designed and intended. You further agree to assume the risk of, and acknowledge that the Green Forest Public Library disclaims all liability for, damages or claims for infringement of intellectual property rights arising from your use of the Library's 3D printing and laser cutting and engraving services.

3D Printer and Laser Engraver/Cutter Policy

The Library's 3D printer is available to the public to make three-dimensional objects in plastic using a design that is uploaded from a digital computer file. The Laser Engraver/Cutter can be used to cut and/or engrave small objects made from wood, plastic, or cardstock, and other similar materials.

- The Library's 3D printer and laser engraver/cutter may be used only for lawful purposes. The public will not be permitted to use the machine to create material that is:
 - Prohibited by local, state or federal law.
 - Unsafe, harmful, dangerous or poses an immediate threat to the well-being of others. (No weapons of any kind.)
 - Obscene or otherwise inappropriate for the Library environment.
 - In violation of another's intellectual property rights. For example, the printers will not be used to reproduce material that is subject to copyright, patent or trademark protection.
- The Library reserves the right to refuse any print, engrave, or cut request.
- Cost: 3D printing will be 10 cents per gram of finished weight, including any supports that were printed, plus \$1/hour, billed at half-hour increments
- Cost: Laser Engraving and cutting will be \$2/hour, with a \$1 minimum, billed every half hour.
- Items created from the printer/cutter/engraver that are not picked up within 14 days will become property of the Library. Items must be picked up by the individual who created them.
- Only designated Library staff and volunteers will have hands-on access to the 3D printer or laser engraver.
- The Library is not liable for any malfunctions or misprints. You must still pay for the malfunctioned piece. Library Staff will attempt to remedy the problem and print a second time. If it is a laser engraving, the library holds no responsibility for damage to the original piece.
- You do not have to be present at your appointment. Library staff print/engrave it for you, however, you can stay and watch. We do recommend you either stay for the length of your print, or check in with your print periodically.

3D Printing FAQ

What is 3D printing?

3D printing, or additive manufacturing, is a process in which solid objects are created from various materials based on a 3D digital design. Rather than cutting away material, objects are created by printing layers of material that are combined to produce a physical object. Printing fun figurines, jewelry, or prototypes for engineers and architects can all be done on 3D printers.

One of the biggest misconceptions about 3D printing is the amount of time it takes to produce an object. It's not a quick process; for example, printing a king or queen chess piece takes nearly one hour. When thinking about 3D printing it's important to remember prints are being created one thin layer at a time so height, depth, supports and in-fill all factor in to the final print time.

What can I print?

Your imagination is the only limit when it comes to 3D printing. The print bed is 250 x 230 x 235mm (or 10 x 9 x 9in), so anything larger than this would need to be printed in stages/parts.

The Green Forest Public Library's 3D printers may be used for lawful purposes only. Patrons are not permitted to use the Library's 3D printers to produce materials that:

- Violate local, state, or federal laws or regulations;
- Look like, function as, or appear to function as weapons or parts thereof;
- Appear unsafe, harmful, dangerous, or that otherwise pose a threat to the health or safety of others;
- May be construed as obscene or otherwise inappropriate for the Library environment;
- Or potentially violate the intellectual property rights of another.

Limitations on Use

The Green Forest Public Library's 3D printing service is designed for rapid prototyping and patron enjoyment and creativity. This service is not intended for production or manufacturing, and the Library reserves the right to refuse to print large numbers of identical objects.

Who Can Print 3D Models at Green Forest Public Library?

Any patron with a library card in good standing issued by a Carroll and Madison County member library may use the Library's 3D print services for specific files they'd like to submit. Carroll or Madison County residents who do not have a library card and wish to make 3D prints should sign up for a library card. Only designated Public Library staff will have hands-on access to the 3D printers.

Staff members can help with the equipment and provide basic software support, but are unable to design files.

How can I use the 3D printer to print my model?

1. Design Creation or Selection
 - a. Creating a new design requires knowledge of 3D modeling software products. TinkerCAD is a free, easy to use program to create your own 3d models.
 - b. Any 3D drafting software may be used to create a design as long as the file can be saved in .stl, .obj, or .thing file format.
 - c. Digital designs also are available from various repositories such as Thingiverse, Pinshape, GrabCAD, MyMiniFactory, or Cults3D.
2. Make a Printing Appointment and Submit your design for approval
 - a. Persons wanting to use the 3D printer shall bring their file (in .stl, .obj, or.thing file format) (no larger than 25 MB), or submit it to the Library to make an appointment.
 - b. The Library will view all files before printing. Librarians will prepare the file for printing using Snapmaker's Luban Software in order to turn your 3D Model into a physical object.
 - c. The Library will schedule only one print per day. You do not have to be present on the day of your appointment, but if you'd like to watch it print, you can.
 - d. 3D Prints shall not exceed 8 hours. The librarians will estimate print time based on Luban Software, and will attempt to lower the resolution or increase speed of the machine to lower it to less than 8 hours if possible.
3. Pick up your completed print and pay for it!
 - a. Wait/pickup time: Items may be picked up at the front desk within 14 days of your appointment. Items will be weighed as is (including supports).
 - b. You will pay 10 cents per gram, plus \$1/hour that it took to create. Librarians can attempt to estimate your cost, but final total will be unknown until the print is complete.
 - c. If you do not come to pick up your print within 14 days, your library card will be charged, and the library will become owner of the print.

Quality

3D printed objects may have small bumps, holes, and/or rough edges. These can be cleaned up using fine sand paper or steel wool. Objects are printed from the bottom up. If a design has a large overhang or suspended parts, support material and/or rafts may be used. These additions are easily removed by the patron. The Library will not be responsible for removing any supports and/or rafts. If the print takes longer than 8 hours, quality will be decreased to speed up the print.

Cost of 3D Printing

The cost for 3D printing is based on the weight of plastic used and is determined after printing is complete. Library staff may estimate the price prior to printing the model, but the exact price will be given to patrons after printing is complete. It costs \$.10 a gram for filament used, plus \$1/hour. This price includes any rafts/brims/supports generated by the software and failed prints due to design error.

All 3D models must be paid for in full before being released to patrons. The cost of 3D models not paid for and collected within 14 days following completion of the print will be charged as a fine against the patron's library card. The Green Forest Library can accept cash or checks.

Unsuccessful Prints

Because of inherent limitations with equipment, the Green Forest Public Library does not guarantee that any 3D model will print successfully. If a print fails due to Library staff error or hardware failure, the Library will attempt to reprint the object. The Library may refuse to reprint the object after two unsuccessful attempts.

The Library may refuse to print 3D models that clearly contain errors or that are, as determined by Library staff, beyond the capabilities of the Library's equipment. The cost of failed prints due to errors within the 3D model and 3D models that are beyond the equipment's capabilities may be charged to the patron.

Laser Engraver/Cutter FAQ

What can I create? How big can my design be?

Our engraving/cutting bed is 250x230x235mm (or 10x9x9) anything that will fit in this space and has a flat surface to engrave/cut on can be used.

Who can use the laser engraver/cutter?

Any patron with a library card in good standing issued by a Carroll and Madison County member library may use the Library's laser engraving/cutting services for specific files they'd like to submit. Carroll or Madison County residents who do not have a library card and wish to create something should sign up for a library card. Only designated Public Library staff will have hands-on access to the Laser engraver/cutter.

Staff members can help with the equipment and provide basic software support, but are unable to design files.

Quality

The staff at the library have practiced and tested a variety of materials, laser speeds, and laser power. We can recommend settings to use, but you are welcome to select other materials, speeds, or powers. We do not guarantee the quality of your engraving or cuts.

Cost

The Cost of the engraving or cutting is determined by the length of time it takes to complete. It costs \$2/hour, with a \$1 minimum.

Unsuccessful Creations

Because of the inherent limitations with the equipment, Green Forest Public Library does not guarantee that any engraved or cut object will complete successfully. If it fails, we can troubleshoot and try again if we have the material to do so. The library may refuse to retry after two unsuccessful attempts. The cost of failed attempts due to errors with the file or your selected settings may be charged to the patron.

Whats the Process to Laser Engrave/Cut?

1. Design Selection or Creation
 - a. Any image you can find online can be engraved. Black and white images or vector images work best.
 - b. If you'd like to both cut and engrave, you will need two separate files, one for the engraved part, and one only for the cut lines.
 - c. Photos, Images, text, and logos all work well. The Green Forest Library's Laser engraver/cutter works much better on simple engraving than cutting.
2. Submit your Design for Approval and make an Appointment
 - a. Persons wanting to engrave/cut something shall bring their image to the library for approval, along with the object you'd like the image on. Approved items are Wood,

Fabric, Leather, Paper, Cardstock, and Cork. The area to be engraved/cut should be flat. If cutting, it needs to be less than 5mm thick.

- b. The library will view files to prepare the file for engraving/cutting and discuss your options.
 - c. The library will only make one appointment per day to use the Engraver/Cutter. You do not have to be present on the day of your appointment, but you are welcome to watch it if you'd like.
 - d. Engraving/Cutting should not exceed 8 hours. The librarians can estimate print time based on Luban software.
3. Pick up your completed object
- a. Wait/pickup time: Items may be picked up at the front desk within 14 days of your appointment.
 - b. You will pay \$2/hour that it took to create. Librarians can attempt to estimate your cost, but final total will be unknown until the object is complete.
 - c. If you do not come to pick up your print within 14 days, your library card will be charged, and the library will become owner of the object.

3d Printing and Laser Engraving

To request a 3d Print or laser engraving/cut, please fill out this form. 3d Prints cost 10 cents per gram, plus \$1/hour. Use of the laser is \$2/hour. Please keep in mind that printing requests could take several weeks depending on our queue.

My Name is: _____

The best way to contact me is: _____

Date I need this by: _____

Submit your file(s) to tnewton@greenforestlibrary.org

3d Printing:

Select a Color:

- White
- Black
- Blue
- Red
- Green
- Yellow/Orange
- Clear/Translucent
- Variegated
- No Preference

Laser Engraving/Cutting

- Cut
- Engraving
- Both (2 files are required for this)

- I agree to pay for the finished product, even if it was unsuccessful.
- I agree to take no legal action against the library in regards to my finished print/engraving

Signature: _____ Date: _____

Staff Use Only:

Staff Initials _____ Received Date _____

Patron Contacted _____ Card in good standing _____

- Approved File Name(s) _____
- Denied Notes: _____