3D Printing FAQs

What is 3D Printing?

3D printing is the process of making a three dimensional object from a digital file. The object is created by laying down successive layers of plastic material on top of each other until the print is created.

You begin by creating a virtual design on a computer or using a 3D scanner to replicate an existing object. Software is then used to slice the designed object into hundreds of horizontal layers. The design is sent to the 3D printer where hot plastic is passed through a super-heated nozzle and laid down layer by layer via a robotic arm.

How do I create or find a design?

There are 3 methods for obtaining 3D designs for printing:

- **Download:** Many designs can be found online, copyright-free, for personal use. A good website to check out is www.thingiverse.com.

- **Scan:** You can take an object that already exists and scan or digitize it to obtain the right dimensions for a 3D replica. We do not currently own a digitizer here at the library. There are also apps that enable you to take multiple photographs of an object to make a 3D file, such as Fusion 360.

- **Make your own:** Many people use computer-aided design (CAD) software to create their own objects for printing. Free online software such as Tinkercad can get you started on the concepts of 3D design.

How long does it take to print a design?

If an object has many layers or a complicated structure, it can take hours to print. A design may also have multiple parts or files. Simpler, flatter designs can be finished in as little as 5 minutes. Because of the time constraints of 3D printing we can only accept submissions that can be done in 3 hours or less.

Examples:

Guitar picks = 5 minutes

Shark = 15 minutes

Bookmark holder = 2.5 hours

What if I need help with designing or troubleshooting my files?
Library staff are available for printing assistance only.

How much do you charge for a 3D print?
We charge $1.00 per file submission regardless of its success. This is for staff time and material cost.

How long will it take for me to get my files printed? What if I have a deadline?
Usually the process of 3D printing requires troubleshooting, whether that be from errors with the design or repair of the printer, which is why the library cannot guarantee that files will be printed by a certain date. We will do our very best to have the design printed in a timely manner.

How large can my file be?
Files must be submitted as .stl files. In regard to proportions, the design must be able to fit on the 3D printer's platform, so it must be under 25.2 L x 19.9 W x 15.0 H centimeters OR 9.9 L x 7.8 W x 5.9 H inches.

How many files can I have printed?
You may submit one file per week. Please keep in mind though that there may be other patrons ahead of you for printing and that the library cannot guarantee that the files will be printed by a certain date.

What if I have a large project with many files?
The 3D Printing service we offer is experimental and introductory. Since we can only accept one file per week per patron, we cannot accommodate mass manufacturing or large projects.

Is the filament recyclable?
Yes. PLA is a corn starch product and is compostable.

Are the fumes generated dangerous?
PLA is non-toxic and smells slightly of popcorn. The printer will be housed in a well-ventilated area.

Why is the library offering this service?
The San Juan Island Library is committed to providing all members of the community with access to new information technologies. Factors considered include the technology's relevance, material and maintenance costs, and relative costs of staff and volunteer time. In keeping with the Library's mission, the Library offers 3D printing to the public as prescribed in Policy 5.6.2—3D Printing, for a time to be determined by the Director.

Why can I only print in one color?
The changing of print filament is a timely process. For that reason we are offering single color printing at this time.