3D Printing Policy

What is 3D Printing?

3D printing, or additive manufacturing, is the process of building physical objects from digital models. Successive layers of material (filament) are laid down in thin layers to create a physical object. 3D printing has applications in numerous fields. A listing of some of these applications can be found on the Roanoke County Public Library 3D printing web page.

What is available at the Roanoke County Library?

The South County Library currently owns a Lulzbot Taz 6 & Lulzbot Mini

Who can print?

The library's 3D printers are available for use by the public. Printing is done on a first-come, first-served basis.

Terms of Use and Copyright

The Library's 3D printers may be used only for lawful purposes. The public will not be permitted to use the Library's 3D printers to create material that is:

I. Prohibited by local, state or federal law.
II. Unsafe, harmful, dangerous or possess an immediate threat to the well-being of others. (Such use may violate the terms of use of the manufacturer.)
III. 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 3D print request. Supervision of the use of the 3D printer by Library staff does not constitute knowledge, or acknowledgement, of any unapparent final use of the 3D product, and the Library specifically disclaims any knowledge thereof. Any individual using the Library's 3D printers agrees to assume all responsibility for, and shall hold the County harmless in, all matters related to the individual's use of the 3D printer, including but not limited to violations of patent, trademark and/or copyright law.

RCPL is not responsible for patron's property, including digital property. While staff will aim to ensure prints come out correctly, we cannot be held responsible for unsuccessful prints.

Cost of 3D Printing

RCPL supplies filament for 3D prints, at the cost of $0.20 per gram. If your print requires supports or rafts to print correctly, the additional weight will be calculated into your final cost. Patrons who wish to use their own filament should call the library for instructions. Staff will do their best to ensure your print is successful, but cannot guarantee success.

Designing Your Model for Printing

The first step in printing your idea is to design the 3D object using a computer-aided design (CAD) software program. There are numerous open source and free software options to render your digital model including Tinkercad, OpenSCAD, and Sketchup. A more complete listing of these options can be found on the Roanoke County Public Library 3D printing web page. Users will need to submit their file in .STL file format in order for library staff to convert the file to one that the 3D printer will read.
If you do not wish to design your own 3D object, there are sources to find models already designed that you may print or alter and then print. Three of these resources are (hyperlinks) Thingiverse, MyMiniFactory, and Yeggi.

File Approval

The library will schedule only one 3D print per day per person or entity. Items printed from the library 3D printer not picked up within two weeks will become the property of the library. Items must be picked up by the individual who printed them. Legal guardians may pick up items for minors.

If you have several files to print, please submit each of these separately by filling out a separate 3D Printing Request Form for each print. All submissions are subject to approval based on scheduling and availability. There may be times that the printer is malfunctioning, being repaired, or is being used for an event or a course. During such times, the 3D printer may be unavailable for use and there will be a delay in approving submissions and printing objects. Any significant lapses in printing time will be noted on the library's web page.

After the submission has been printed and the print has been picked up or the two week time limit to pick up the object is over, the submitted file will be deleted by library staff.

Quality

Users may see slight imperfections in their prints. Small bumps or holes and rough edges at the base of an object may occur with 3D printing. You can clean up some of the imperfections with fine sand paper or other tools. Our 3D printers are very accurate, but there may be some instances where objects do not fit precisely together.

The printers build objects from the ground up. There are instances where certain prints will require support material and / or rafts to ensure proper printing. Support material is often needed if the design has large overhangs or parts suspended in mid-air. Rafts are often used as support at the base of the model. These types of additions are easily removable by the user. Staff will not be responsible for removing any supporting material and/or drafts for the user.