Pasadena Public Library

3D Printing Policy

What is 3D Printing?

3D printing is the process of making a physical object from a three-dimensional digital model by laying down many thin layers of a material in succession. The Prusa 3D printer at the Pasadena Public Library (PPL) has a computer-controlled hot nozzle that melts the plastic filament (similar to a hot glue gun) which is deposited layer-by-layer until the final physical form is completed. The Prusa uses a non-toxic plastic called polylactic acid (PLA).

What can I print?

You can print almost anything that your imagination comes up with! Once you have an idea of what to print, you will start with a computer model that can be obtained in a few different ways:

- Design using CAD (Computer-Aided Design): One of the most popular CADs for beginners is Tinkercad, a free browser-based tool that requires no download or installation. FreeCAD is another free tool to design your ideas, but must be downloaded.
- Download existing models: You can find designs online that are Creative Commons-licensed and public domain for personal use. Check out Thingiverse, Pinshape or other 3D model depositories for a large variety of models. These websites will have the files you will need to transfer to the software in order to edit and begin printing. Keep in mind, downloading files from Thingiverse is free while Pinshape charges money for some of their files.

How can I 3D print at PPL?

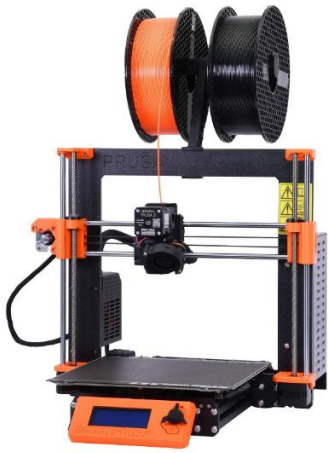
Patrons who wish to use one of the Prusa 3D printers are expected to attend a free orientation class and earn a "3D printer orientation/machine badge" through the PPL Beanstack Challenge. The orientation class covers the basic operation of 3D printers, the tools and techniques to create 3D models and PPL's 3D printing policy. After attending the orientation class, patrons will receive their 3D printer badge on Beanstack within two business days. Upon receiving the badge, patrons may request an appointment on a Prusa 3D printer to print their project. Please allow two business days for your request to be confirmed. Patrons must be present to begin their print and stay the first 30 minutes to ensure the print successfully begins and must remain in the building for the duration of the print job. The cost of printing is 10¢ per gram for regular filaments and 20¢ per gram for special filament for the final project. Total cost will be rounded to the nearest gram. For example, if your print weighs 1.35 grams, it will be rounded down to one gram. Estimating the printing time may be done using the software taught during the orientation classes. Patrons under the age of 16 must be accompanied by a parent/guardian.

I've taken the orientation class – now what?

1. Sign into your Beanstack account or sign up for a free account now. (If you have registered for PPL's Summer Reading Program in the past, you may already have an account). If you have a Harris County Beanstack account, patrons **must** create a separate account with PPL to track your Maker Lab trainings.
2. Click on the Maker Challenge. Once you are in, you will click on the "Badges" tab under the Maker Challenge image.
3. Click on the appropriate badge that you have earned depending on which machine orientation you have done. For example, if you have completed the 3D orientation, then click on that badge.
4. Fill out the reservation form and submit. You will receive an initial email that your request was received. After two business days, you will receive an email confirming your request.
5. If you have any questions, please contact the library for assistance.
6. Enjoy the benefits of being a badged Maker person!

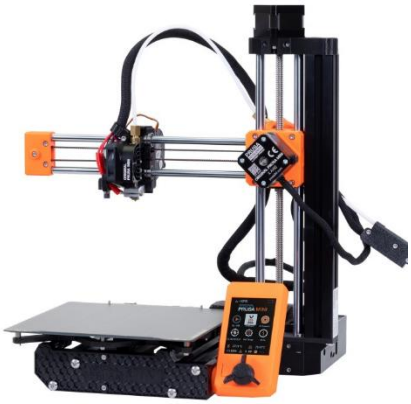
PPL's 3D printers

Prusa Original i3 MK3S+



- Max Build Volume: 25 x 21 x 21 cm
- Max nozzle temperature: 300°C / 572°F
- Print Bed: Removable magnetic steel sheets
- Layer Resolution: 0.05 - 0.35 mm
- Max heat bed temperature: 120°C / 248°F

Prusa MINI+



- Max build volume: 7 x 7 x 7 in
- Max nozzle temperature: 280°C / 536°F
- Print bed: Removable magnetic steel sheets
- Layer resolution: 0.05mm - 0.25mm
- Max heat bed temperature: 120°C / 248°F