

## 3D Printing with Cura on Lulzbot Mini

3D printing is fun and easy! In our MCDS Makerspace, we have four Lulzbot Mini 3D printers. Below are step-by-step instructions for using the printers. It is important also to make sure the filament (plastic roll) is free of a clog in the nozzle. Be sure to heat up the element and check the head of the filament each time for best results.

3D MODEL LIBRARIES
<a href="#">Thingiverse</a>
<a href="#">Grabcad</a>
<a href="#">Sketchfab</a>
<a href="#">Autodesk 123d</a>
<a href="#">My Mini Factory</a>
<a href="#">XYZprinting 3D Gallery</a>
<a href="#">Yobi3D</a>
<a href="#">YouMagine</a>
<a href="#">STL Finder</a>
<a href="#">3DExport</a>
<a href="#">Zortrax Library</a>
<a href="#">3DShook</a>
<a href="#">Rascomras</a>
<a href="#">Threeding</a>
<a href="#">Repables</a>
<a href="#">Libre3D</a>
<a href="#">3Dagogo</a>
<a href="#">Shapetizer</a>
<a href="#">The Forge</a>
<a href="#">Redpah</a>
<a href="#">Trinpy</a>
<a href="#">Polar Cloud</a>
<a href="#">3D Warehouse</a>
<a href="#">STLHive</a>
<a href="#">NASA</a>
<a href="#">NIH 3D Print Exchange</a>
<a href="#">Instructables</a>

**Easy 3D Printing!**  
3D printing can be intimidating if you're new to it, but it's easier than you may think. This class gives you the basic skills you need to print your own designs using [Tinkercad](#) - a fun, browser-based 3D modeling program that you can learn in no time!

1. Create your 3D design or download it from a source at the left.
2. Have your model ready on a flash drive, or accessible from a web source, like your Google Drive.
3. Log onto one of the laptops connected to the 3D printers. If none are connected, just grab any from the cart in the room. They all have the CURA program installed on them.
4. Open Cura and "Load" your model onto the platform. Your model needs to fit within a 6 x 6 x 6 inch work envelope. If it needs to be resized, click on the model,
5. Switch to Full Settings
6. Check the Basic and Advanced tab settings. These are the settings for the Hatchbox 1.75 PLA.



**BASIC:**

Cura - 20.01

File Tools Machine Expert Help

Basic Advanced Plugins Start/End-GCode

**Quality**

Layer height (mm)

Shell thickness (mm)

Enable retraction

**Fill**

Bottom/Top thickness (mm)

Fill Density (%)

Perimeters before Infill

**Speed and Temperature**

Print speed (mm/s)

Printing temperature (C)

Bed temperature (C)

**Support**

Support type

Platform adhesion type

**Filament**

Diameter (mm)

Flow (%)

**ADVANCED:**

Cura - 20.01

File Tools Machine Expert Help

Basic Advanced Plugins Start/End-GCode

**Machine**

Nozzle size (mm)

**Retraction**

Speed (mm/s)

Distance (mm)

**Quality**

Initial layer thickness (mm)

Initial layer line width (%)

Cut off object bottom (mm)

Dual extrusion overlap (mm)

**Speed**

Travel speed (mm/s)

Bottom layer speed (mm/s)

Infill speed (mm/s)

Top/bottom speed (mm/s)

Outer shell speed (mm/s)

Inner shell speed (mm/s)

**Cool**

Minimal layer time (sec)

Enable cooling fan

7. Print and watch to make sure the print is seemingly successful.