General 3D Printing

Place for stuff that applies to more than one type of 3D Printing

- [3D Model Repositories](#)
- [Raspberry Pi's for Octoprint](#)
- [Octoprint Plugins](#)
- [Adhesives for 3D Printed Parts](#)

3D Model Repositories

There are many great places to find models!

All these sites have quality 3D models available although not all 3D models are printable.

- **Thangs -** https://thangs.com
  - Kind of a 3D model search engine, but they require free account login to download anything :(

- **Printables -** https://printables.com
  - All models are free and most tend to be of high quality

- **Thingiverse -** https://www.thingiverse.com/
  - This is easily the largest collection of printable models available anywhere, with all models free

- **MyMiniFactory -** https://www.myminifactory.com/
  - Great high-quality models, but not all models are free and some can be quite costly

- **Scan the World -** https://www.myminifactory.com/scantheworld/
  - People scan things, often art and sculpture, and make them available to the world, although not all of the models can be printed as downloaded

- **YouMagine -** https://www.youmagine.com/
  - Similar to thingiverse.com with 15,000+ printable designs

- **Cults3D -** https://cults3d.com/
  - This site bills itself as a social network for fans of the 3D printer world and has 80,000 models although many of those overlap with thingiverse.com

- **Smithsonian 3D Digitization -** https://3d.si.edu/
  - A group of technologists working within the Smithsonian Institution Digitization Program Office, although not everything is printable as it is provided

- **U.S. Department of Health and Human Services National Institutes of Health -** https://3dprint.nih.gov/
  - The NIH 3D Print Exchange provides models in formats that are readily compatible with 3D printers, and offers a unique set of tools to create and share 3D-printable

models related to biomedical science.

- **TraceParts -** https://www.traceparts.com/
  - Design library of models for hardware, gearing, etc. that is available through a huge list of catalogs, a great resource for sizing a print to interface with the real world

- **PinShape -** https://pinshape.com/
  - This site has both Free and costly models, but the quality is typically excellent

- **Yeggi -** https://www.yeggi.com/
  - A search engine for 3D printable models that indexes many sites

- **CGTrader -** https://www.cgtrader.com/
  - A search engine for costly models, although not all of the models can be printed as downloaded

- **GrabCAD Community -** https://grabcad.com/library
  - Tons of CAD files that can be printed, although not all of the models can be printed as downloaded

- **Fab365 -** https://fab365.net/
  - "3D Printing Model Marketplace" that has many high quality designers posting new designs

- **NASA Model Site -** https://nasa3d.arc.nasa.gov/models/printable
  - NASA's 3D printable model site

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Raspberry Pi's for Octoprint

Octoprint is Awesome!

Octoprint is Free and Open Source!

...and *We* should **donate***(if we can)* to help keep it awesome!

https://octoprint.org/

"Recommended hardware: Raspberry Pi 3B, 3B+, 4B, or Zero 2. Expect print artifacts and long loading times with other options, especially when adding a webcam or installing third party plugins"

- Raspberry Pi Zero 2 W
  - Heat is rarely a problem if "stick-on" Heatsinks are used with some vent holes in the case (No Fan)
    - https://www.thingiverse.com/thing:3572030
  - Micro-USB OTG USB hub with power input (Allows accessories to plugin)
    - https://www.amazon.com/TUSITA-Adaptor-Charging-Adapter-Raspberry/dp/B00LTHBCNM
  - Logitech c270
    - https://www.amazon.com/Logitech-Widescreen-Correction-Noise-Reducing-FaceTime/dp/B01BGBJ8Y0/
    - https://www.thingiverse.com/thing:3081838
  - Raspberry Pi Camera Module V2
    - https://www.amazon.com/Raspberry-Pi-NoIR-Camera-Module/dp/B01ER2SMHY

- Raspberry Pi 3B+
  - Heat is rarely a problem if stick on Heatsinks are used with some vent holes in the case (No Fan)
    - https://www.thingiverse.com/thing:2620241
  - Logitech c270
    - https://www.amazon.com/Logitech-Widescreen-Correction-Noise-Reducing-FaceTime/dp/B01BGBJ8Y0/

- https://www.thingiverse.com/thing:3081838
  - Raspberry Pi Camera Module V2
    - https://www.amazon.com/Raspberry-Pi-NoIR-Camera-Module/dp/B01ER2SMHY

- Raspberry Pi 4

  - Great aluminum housing/heatsink for the Pi 4
    - https://www.amazon.com/Geekworm-Raspberry-Computer-Aluminum-Compatible/dp/B07VD568FB/
  - 5v fan screwed(M3) into the fins of the heatsink and plugged into the GPIO pins
    - https://www.amazon.com/Noctua-Cooling-Bearing-NF-A4X10-FLX-5V/dp/B00NEMGCIA/
    - https://www.thingiverse.com/thing:4837562
  - Logitech c270
    - https://www.amazon.com/Logitech-Widescreen-Correction-Noise-Reducing-FaceTime/dp/B01BGBJ8Y0/
    - https://www.thingiverse.com/thing:3081838
  - Raspberry Pi Camera Module V2
    - https://www.amazon.com/Raspberry-Pi-NoIR-Camera-Module/dp/B01ER2SMHY

My Resin printer does not work with Octoprint, so I used a Raspberry Pi Zero W to make a windows SMB shared folder that is accessible wirelessly and connects to the USB thumb drive port on the Resin Printer (see Resin Printing section)

Octoprint Plugins

To each their own

Every printer and setup is different, and everyone has <u>different</u> uses and priorities!

Prusa Mk3s+ (Modified for higher enclosure temperatures)

- Cancel Objects https://plugins.octoprint.org/plugins/cancelobject/

- DisplayLayerProgress https://plugins.octoprint.org/plugins/DisplayLayerProgress/

- Enclosure Plugin https://plugins.octoprint.org/plugins/enclosure/

- Exclude Region https://plugins.octoprint.org/plugins/excluderegion/

- File Manager https://plugins.octoprint.org/plugins/filemanager/

- Firmware Updater https://plugins.octoprint.org/plugins/firmwareupdater/

- Fullscreen Plugin https://plugins.octoprint.org/plugins/fullscreen/

- MultiCam https://plugins.octoprint.org/plugins/multicam/

- Octolapse https://plugins.octoprint.org/plugins/octolapse/

- Preheat Button https://plugins.octoprint.org/plugins/preheat/

- Pretty GCode https://plugins.octoprint.org/plugins/prettygcode/

- PrintTimeGenius https://plugins.octoprint.org/plugins/PrintTimeGenius/

- Progress Title https://plugins.octoprint.org/plugins/progress_title/

- Prusa Leveling Guide https://plugins.octoprint.org/plugins/PrusaLevelingGuide/

- PSU Control https://plugins.octoprint.org/plugins/psucontrol/

- PSU Control – TPLink https://plugins.octoprint.org/plugins/psucontrol_tplink/

- Resource Monitor https://plugins.octoprint.org/plugins/resource_monitor/

- Restore Leveling After G28 https://plugins.octoprint.org/plugins/restorelevelingafterg28/

- Slicer Thumbnails https://plugins.octoprint.org/plugins/prusaslicerthumbnails/

- Themeify https://plugins.octoprint.org/plugins/themeify/

- Timelapse Purger https://plugins.octoprint.org/plugins/timelapsepurger/

- TP-Link Smartplug https://plugins.octoprint.org/plugins/tplinksmartplug/

- TpLinkAutoShutdown https://plugins.octoprint.org/plugins/TpLinkAutoShutdown/

Prototype Printer (Bed slinger style Low specs)

- Bed Visualizer https://plugins.octoprint.org/plugins/bedlevelvisualizer/
- Cancel Objects https://plugins.octoprint.org/plugins/cancelobject/
- DisplayLayerProgress https://plugins.octoprint.org/plugins/DisplayLayerProgress/
- Exclude Region https://plugins.octoprint.org/plugins/excluderegion/
- File Manager https://plugins.octoprint.org/plugins/filemanager/
- Firmware Updater https://plugins.octoprint.org/plugins/firmwareupdater/
- Fullscreen Plugin https://plugins.octoprint.org/plugins/fullscreen/
- Octolapse https://plugins.octoprint.org/plugins/octolapse/
- Preheat Button https://plugins.octoprint.org/plugins/preheat/
- Pretty GCode https://plugins.octoprint.org/plugins/prettygcode/
- PrintTimeGenius https://plugins.octoprint.org/plugins/PrintTimeGenius/
- Progress Title https://plugins.octoprint.org/plugins/progress_title/
- PSU Control https://plugins.octoprint.org/plugins/psucontrol/
- PSU Control – TPLink https://plugins.octoprint.org/plugins/psucontrol_tplink/
- Resource Monitor https://plugins.octoprint.org/plugins/resource_monitor/
- Restore Leveling After G28 https://plugins.octoprint.org/plugins/restorelevelingafterg28/
- Slicer Thumbnails https://plugins.octoprint.org/plugins/prusaslicerthumbnails/
- Themeify https://plugins.octoprint.org/plugins/themeify/
- Timelapse Purger https://plugins.octoprint.org/plugins/timelapsepurger/
- TP-Link Smartplug https://plugins.octoprint.org/plugins/tplinksmartplug/
- TpLinkAutoShutdown https://plugins.octoprint.org/plugins/TpLinkAutoShutdown/

Adhesives for 3D Printed Parts

- This is a PDF document created by the Loctite Company describing their various adhesives and which ones provide the best results under various conditions:
  - https://dm.henkel-dam.com/is/content/henkel/loctite-3d-printing-bonding-guide-english
  - I learned a bunch about adhesive use: gap requirements for certain glues/epoxies to get desired results, usable temperature ranges, and which types of glues or epoxies are most likely to work with various 3D printed plastics.
  - Even though this is a Loctite branded document, all adhesive manufacturers have equivalents with likely similar properties and requirements. A great resource in my opinion.