

3D printing for the Hobbyist

Online sources:

- thingiverse.com - Over 10,000 free projects.
- eclipson-airplanes.com - A bunch of airplane plans for sale.
- rc-jet-print.de - Several complex airplane plans for sale, about \$75.00. Worth watching some of their YouTube videos, even if you don't purchase any, just to see the amount of research in each plane.

Slicer:

- Cura - <https://ultimaker.com/software/ultimaker-cura/> for download

CAD program:

- Autodesk Fusion 360: Free. Is plenty good. Recommended.
- Sketchup: Paid version not worth it.
- SolidWorks: Industry standard.
- FreeCad: Pretty good.
- TinkerCad: Simple.

Filaments:

- PLA: Most common. Easy to print with. Durable and inexpensive. Made from corn starch.
- ABS: Extremely tough. Very fussy to print with. Toxic fumes!
- Nylon: Excellent for harsh environments. Fussy to print.
- TPU: Super flexible. Tough. Pretty easy to print with.
- LW-PLA (light weight PLA): Less than half the weight of PLA. About the density of balsa. Easy to print and work with. Pretty durable. A little more expensive.
- Wood and metal: Gimmicky. Expensive. Material blended with substrate, usually PLA.
- Carbon Fiber: Expensive. Very abrasive. Must use special ruby nozzle.

Shopping for printer features:

- Auto bed leveling: Mandatory
- Video monitoring: A little nice to have. This detects print failure.
- WiFi: Optional (You can easily take the print job from computer to printer on a thumb drive.)
- Print bed minimum size: 200mm x200mm, 325mm x 325mm is even better.
- Simultaneous multiple filaments printing: Gimmick. (This allows you to print a model with two or more different colors.)
- Speed: Basic speed is 300 mm/sec, but more printers are coming out at 600 mm/sec. Worth the higher speed. Life's too short to wait for your printer to finish.
- Enclosed: I'm not sure about this one. Many of the higher end printers are enclosed, but I print all my projects without enclosure except for ABS. It's mandatory to print ABS inside an enclosure!