3d Printing & Woodworking

January 2026

Why would I use a 3d printer in my woodworking shop?

A 3d printer in a woodworking shop provides, custom jigs, specialized templates, and tailored shop organization, improving efficiency and accuracy. It excels at creating bespoke dust collection adapters, unique clamps, hardware, and shop tool upgrades. Printers also facilitate prototyping designs and creating small parts that are difficult to carve.

Key Applications of 3d Printing in Woodworking:

- **Custom Jigs & Fixtures**: Create specialized routing templates, drilling guides, and clamping jigs for specific project needs.
- **Shop Organization**: Print custom holders for tool bits, clamps, sandpaper, and other small items to declutter the workspace.
- **Dust Collection Adapters**: Design and print custom-fit ports for connecting different hoses, vacuum systems, and power tools.
- **Prototyping**: Quickly create small-scale models or parts to test, refine designs, and verify fits before cutting expensive wood.
- **Replacement Parts & Accessories**: Manufacture unique, hard-to-find components, such as knobs, T-track accessories, or custom drawer inserts.
- **Hardware and Connectors**: Produce specialized joinery pieces, such as brackets or plastic connectors for assembly.

Benefits to the Shop:

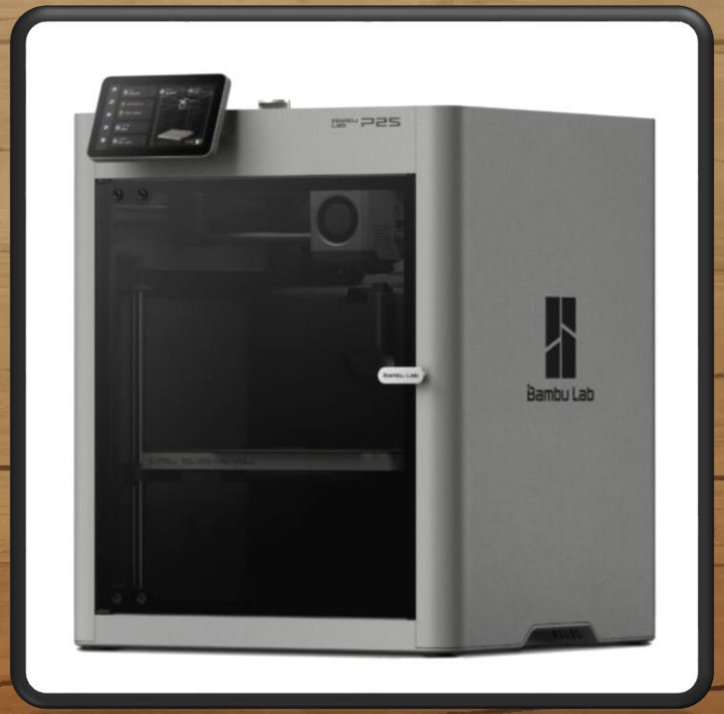
- Increased Productivity: Saves time on creating complicated jigs and tools.
- Enhanced Accuracy: Produces precise, repeatable parts.
- Customization: Allows for, creating unique components tailored to specific needs.
- Cost-Effective: Provides an affordable way to make, tools and, parts in-house.

Step 1
Pick a Printer

Type: FDM vs Resin

95 % of first-time users choose a FDM (filament extrusion for durable parts) 3d printer.

AnyCubic
Bambu Lab
Creality
Elego
PRUSA



- FDM - filament is king for functional parts, larger items, and lower cost per part
- Resin - (SLA/DLP/LCD) - shine for highly detailed, small parts (miniatures, dental, jewelry)

Market Niche: Think figurines/toys (Resin) vs. functional prototypes (FDM) vs. end-use parts (Both, depending on strength/finish needed).

Want to explore more? Go to Best Buy or Microcenter! They have them where you can explore and see what they look like and review features and options!

Step 2
Choose a Filament

Or a couple in a multi-color print!

Guide to 3d Printing Filament

6 polymers most used:

- PLA - polylactic acid - 50% of the market
- ABS - acrylonitrile butadiene styrene - lego bricks
- PETG - polyethylene terephthalate glycol - modified version of the PET plastic used in water bottles
- TPU - thermoplastic polyurethane - flexible, rubber-like material - print your own shoes!
- Nylon - polyamide
- PC - polycarbonate

https://all3dp.com/1/3d-printer-filament-types-3d-printing-3d-filament/

Guide to 3d Printing Filament

Specialty Filaments!

- Wood-Filled - 70% PLA and 30% wood fibers
- Metal-Filled
- Glow-in-the-Dark
- Color Changing
- Fiber-Filled (Carbon, Glass, Kevlar)
- ASA - Acrylonitrile styrene acrylate - high heat and UV resistance - Outdoor use

https://all3dp.com/1/3d-printer-filament-types-3d-printing-3d-filament/

Step 3
Choose a Model

Model Sites and Sponsors:

https://www.cgtrader.com - N/A

https://www.crealitycloud.com - Creality

https://www.cults3d.com - N/A

https://www.makerworld.com - Bambu Labs

https://www.myminifactory.com - N/A

https://www.patreon.com - N/A

https://www.printables.com - Prusa

https://www.thangs.com - N/A

https://www.thingiverse.com - UltiMaker

Step 4
Choose a Slicer

Software program to view/modify/print your model

Slicers:

The software generates "G-code" instructions that the printer can understand. This is the same process as a laser engraver/cuter and a CNC.

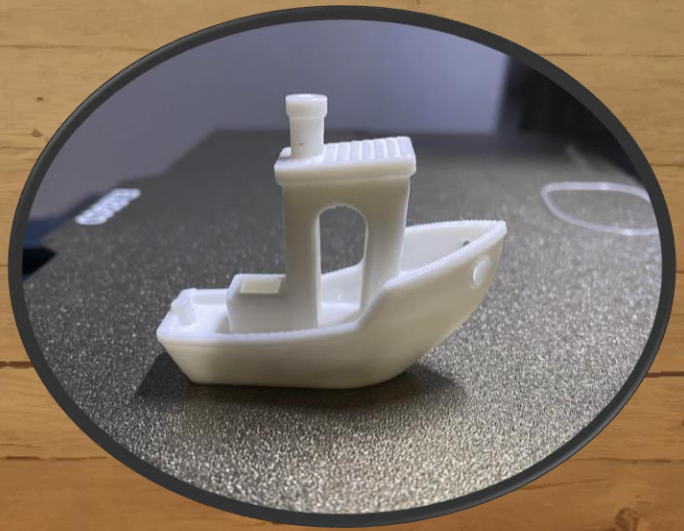
The best slicer for beginners is the one that comes with your printer!

Bambu Studio / Bambu Handy - Bambu Lab
Elego Slicer
Orca - Advanced version and fork from Bambu Studio - Open-Source
Prusa Slicer
UltiMaker Cura

Step 5
Print Your Model

First print = Benchy!

A “Benchy” is a small, tugboat-shaped 3d model designed as a universal benchmark for testing and calibrating 3d printers, packed with features like overhangs, bridges, small text, and precise curves to reveal a printer's strengths and weaknesses in a quick, recognizable print that uses minimal material. It's often called the "jolly 3d printing torture-test" because its design highlights issues like stringing, warping, and dimensional accuracy.



It's the "Hello World" for 3d Printers.

Step 6
Build Your Own Model

Some Software Options:

Blender - https://www.blender.org
Fusion 360 - https://www.autodesk.com/products/fusion-360
Tinkercad - https://www.tinkercad.com
Sketchup Free - https://sketchup.trimble.com

Interesting Projects:

https://www.eclipson-airplanes.com
https://www.flightory.com
https://www.3daeroventures.com
https://the3dprintzone.com

Thank you for your time today!

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