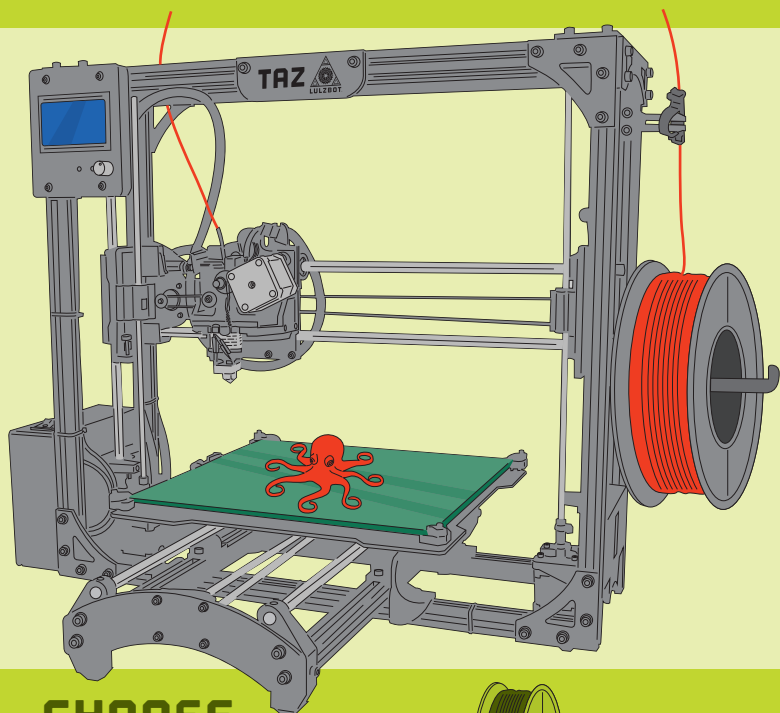
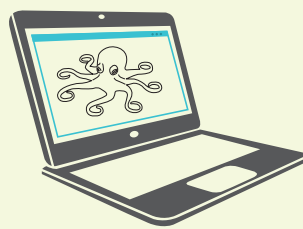


HOW 3D PRINTING WORKS

IN THE WORLD OF FREE SOFTWARE
AND OPEN SOURCE HARDWARE



CREATE A 3D OBJECT DESIGN



Use free software to design your object.

- Never pay for upgrades
- Anyone can use and modify
- Download for free at: www.LulzBot.com

CHOOSE YOUR MATERIAL

There is an ever-growing variety of materials to choose from. Select the filament that best fits your needs. Different materials require different settings.

Plastic

PLA – derived from renewable resources like cornstarch.

ABS – the most commonly used thermoplastic.

HIPS – high-impact polystyrene, great for lightweight parts.

Polycarbonate – used for bulletproof glass, great for high-temperature parts.

PVA – water-soluble synthetic polymer mainly used to print support material.

Rubber-like

TPU & NinjaFlex – highly elastic, super strong plastics used to make belts, gaskets, and inflatable products.

Soft PLA – flexible material that feels and acts much like rubber.

Stone

LayBrick – a mineral-based filament with smooth or rough finish, ideal for architectural models.

Food safe

T-Glase (PETT) – FDA-approved for direct food contact and containers. Water clear with very low shrinkage, great for printing large, flat surfaces.

Nylon

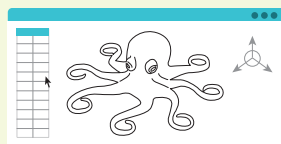
Taulman 618 and 645 – high-strength nylon. Can be colorized with most common clothing dyes.

Wood-like

LayWoo-d3 (LayWood) – a mixture of recycled wood fibers and polymer binders. Can be made to appear rough or be easily sanded smooth and can be printed with a faux wood ring.

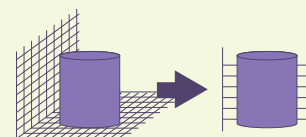
PREPARE YOUR OBJECT TO PRINT

1



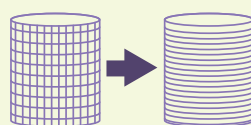
Create a 3D model using CAD (Computer Aided Design) software. We like FreeCAD, OpenSCAD, and Blender, or you can use your preferred CAD program.

2



Export your file to STL formatted file.

3



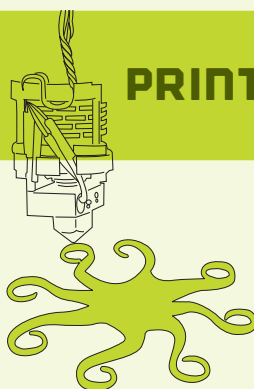
Slice the 3D model into printable cross-section layers using Slic3r or your preferred software and convert to GCODE file.

4

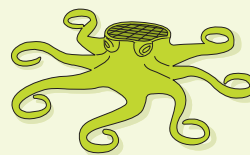


Send final GCODE file to printer using Pronterface or your preferred software, or copy GCODE file directly to SD card and print from the LCD board.

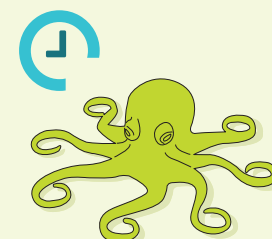
PRINTING YOUR DESIGN



Filament is extruded through the hot end.



Material is laid down in thin layers to build your object.

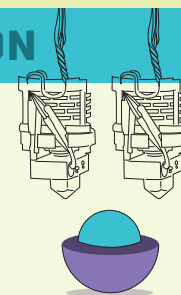


Printing can take minutes or all day depending on size, complexity, resolution, and materials.

OPEN SOURCE HARDWARE & FREE SOFTWARE = LIBRE INNOVATION

With the freedom to modify hardware and software to meet your needs, you will never be out of date as 3D printing technology advances.

For example, add a second extruder to print two colors or materials at the same time. Download plans at: www.LulzBot.com/plans



HOW 3D PRINTING
WITH FREE SOFTWARE &
OPEN SOURCE HARDWARE
IS CHANGING THE
WORLD



Create rapid prototypes quickly and affordably. Modifying a design takes hours, not months.



Open source hardware and free software allow flexible research and development.



Design and print almost anything you can imagine, like architectural models and complex objects with multiple parts. Visualize and modify inventions efficiently.