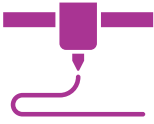


A GUIDE TO 3D PRINTING

WHAT IS 3D PRINTING?



3D printing is an additive manufacturing process. It works by building an object one layer at a time.



There are many different types of 3D printers. The most common consumer printers use plastic filament or liquid resin.



Digital files (.stl) are converted into machine language (.gcode) and sent to the printer.

DESIGNING FOR FUSED FILAMENT PRINTING

- Avoid overhangs and floating pieces
- Split complex objects into parts
- parts $> 45^\circ$ from the build plate will need supports
- PLA prints at $185^\circ - 210^\circ$ Celsius

DESIGN WITH PROCESS AND MATERIAL IN MIND

Fused Filament Printing with PLA



- Melts plastic and builds layer by layer - like drawing with a hot glue gun.
- Better for large and low resolution objects
- Avoid overhangs and narrow pieces
- Available in many different colors

Other Materials

- TPU - flexible rubber-like material
- PETG - stronger and more durable
- Resin - high resolution prints, uses an SLA 3D printer to turn liquid resin into objects using lasers.





GETTING STARTED WITH 3D DESIGN

USE THESE RESOURCES TO FIND OR DESIGN SOMETHING TO 3D PRINT



THINGIVERSE.COM

Get ideas!

See and print what others are making.



TINKERCAD.COM

Great for beginners!

Combine geometric shapes to create a 3D object.



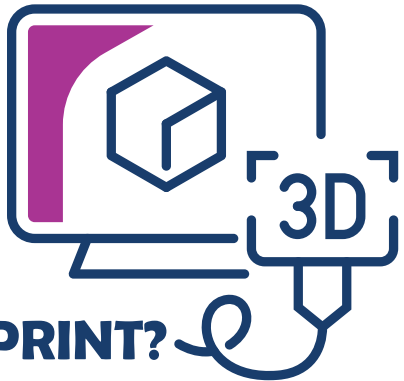
SCULPTRIS

Great for artists!

Sculpt a digital ball of clay. Download at pixologic.com/sculptris

MORE RESOURCES

- Onshape.com
- Pinshape.com
- YouMagine.com
- Yeggie.com



READY TO PRINT?

Visit www.caldwellpubliclibrary.org/3dprinting

Questions? ☎ (208) 459-3242 ✉ infolibrary@cityofcaldwell.org