

COMMERCIAL RESOURCES

SHAPEWAYS (WWW.SHAPEWAYS.COM)

Shapeways allows users to upload their own models, use its model generators, or buy pre-made models. You can sell your own models on Shapeways or you can order 3D prints of the models by mail.

SCULPTEO (WWW.SCULPTEO.COM/EN)

Sculpteo works very similarly to Shapeways in regard to uploading and selling models. There are no model generators, but Sculpteo has more tools for model preparation. You can pay to print and mail the models.

SKETCHFAB (SKETCHFAB.COM)

You can share and sell models on Sketchfab. It provides various methods for sharing content including embedding your examples in your own website.

CRAFTCLOUD3D BY ALL3DP (CRAFTCLOUD3D.COM)

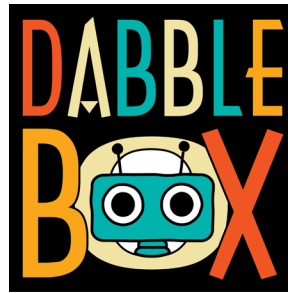
A fairly straight forward service created by All3DP that lets you upload a model and order a print of it. Offers a price comparison from various providers including some listed here such as Sculpteo and i.Materialise.

I.MATERIALISE (I.MATERIALISE.COM/EN)

A long-running (25 years) upload-print-mail option with many options for materials and printing methods.

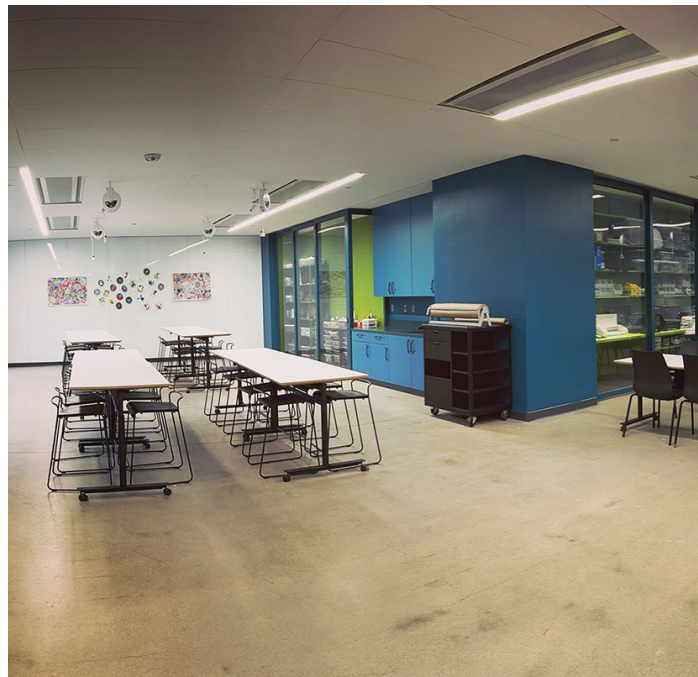
XOMETRY (XOMETRY.COM)

Has a wide array of capabilities for requesting 3D prints with a quick Instant Quote system.



THE DABBLE BOX is a space where curious people can dabble in science, technology, engineering, art, and math activities. It has equipment ranging from robots, to a sewing machine, to musical instruments available during open labs.

Play · Make · Share



DABBLE BOX BASICS

3D Modeling

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WHY MAKE A MODEL?

3D modeling is a skill that has many uses including 3D printing, animated video, advertising, video games, architectural design, interior design, and much more. A few of the more common uses for 3D prints are prototyping, miniatures (e.g. gaming minis), replacement parts, and life hacks.

PROTOTYPING

You might be interested in designing a new product but haven't had the opportunity to test it out or provide a working prototype. With 3D modeling and printing, you have the resources to create your own prototypes. Computer-Aided Design (CAD) is your best option.

MINIATURES/MODELS

There are many reasons to create models or miniatures such as scale models for architecture, interior design, landscaping, board game pieces, or roleplay miniatures. CAD or sculpting software are both viable options.

PART REPLACEMENT OR LIFE HACKING

Anyone can relate to needing a part for something and not having it. Sometimes parts are no longer manufactured, too expensive, or difficult to obtain. Whatever the reason, you might be able to find or create a part using 3D modeling. The precision necessary for making these parts usually requires CAD software.

3D PRINTING IN THE DABBLE BOX

We use a Flashforge Creator Pro for 3D printing. You can find a 3D Print Submission Form on the Dabble Box page of our website at: www.ecpubliclibrary.info/dabble.

FREE MODELING SOFTWARE

This is a list of free-to-use CAD and sculpting software. These applications are licensed for personal use and most for commercial purposes.

TINKERCAD (CAD)

Tinkercad is a web-based application that requires a free account to use, and you can store your work right on the website. Owned by 3D industry giant, Autodesk, Tinkercad provides users with an outstanding beginner-level experience.

BLENDER (MODELING & SCULPTING)

Blender, the premier open-source 3D modeling software, is becoming an industry standard. Blender is highly recommended for both modelers and sculptors who do not have thousands of dollars to invest in commercial software. A newer movie called *Next Gen* on Netflix was almost completely made in Blender.

SCULPTGL (SCULPTING)

SculptGL is a web-based application that allows the user to mold a clay-like sphere into a model. It's simple software, but it's enough to create a basic model.

SKETCHUP FREE (CAD)

SketchUp is an easy-to-use web-based software that provides a free version with substantial capability and the ability to download an STL file.

VECTARY (CAD)

Vectary is another web-based software that is a little more advanced than Tinkercad. They have a free version for modeling and a subscription for advanced features such as posing and animation.

HONORABLE MENTIONS

- Figuro (CAD & Sculpting)
- ZBrushCoreMini (Sculpting)
- BlocksCAD (Coding/CAD)
- SelfCAD (CAD)
- LibreCAD (CAD)

FREE EDITING SOFTWARE

This is a list of model editing software to optimize 3D models for printing. These applications may all be used for either personal or commercial purposes.

INSTANT MESHES (RETOPOLOGY*)

Some models are too complex for 3D printing or other practical uses. No longer updated but still functional.

MESHMIXER (MESH EDITING*/SCULPTING)

Meshmixer provides a variety of tools for mesh editing. No longer updated but still functional.

MESHLAB (MESH EDITING*)

Meshlab is a competitor to Meshmixer that helps optimize models for 3D printing. No longer updated but still functional.

INDUSTRY STANDARDS

AUTOCAD (\$1955/YR)

Autodesk's granddaddy of CAD software since 1982.

3D STUDIO MAX (\$1875/YR)

3DS Max is a popular application for 3D modeling, texturing, and animation from Autodesk.

ZBRUSH (\$895 OR \$360/YR)

Pixologic's Zbrush is arguably the leading application for digital sculpting and painting.

MUDBOX (\$100/YR)

Mudbox, ZBrush's main competitor, is Autodesk's sculpting and painting software.

SOLIDWORKS STANDARD (Contact manufacturer for pricing.)

Solidworks is a CAD software often used for academic and industrial use.

*Retopology and mesh editing are both important but are too complex to explain in this basic introduction.