3D Printing Resources

Below are just a few of the resources available to help with 3D printing. These resources can help you get started with 3D printing and provide resources to local connections that might lead to volunteers and local support. This is not a complete list of all 3D printing resources but a great place to get started and to learn more about the technology and its possibilities!

TinkerCAD – tinkerCAD.com

*"Tinkercad is an easy, browser-based **3D design and modeling** tool for* all*. Tinkercad is also your perfect **3d printing** companion – it allows you to imagine anything, and then design it in minutes!"*

TinkerCAD is a free online CAD software that allows anyone to create a 3D design by combining geometric shapes, letters, and other pre-fabricated items. Users can also upload 3D designs from others, and modify these designs before printing. TinkerCAD includes a number of tutorial projects to teach individuals how to use the software. TinkerCAD is extremely youth and user friendly. You cannot download TinkerCAD to your computer, and will need internet access to use the software. You do need an account to use TinkerCAD and youth accounts need to be approved by an adult.

Google SketchUp – sketchup.com

"SketchUp was built to be fun to use, so don't be surprised to find a room full of kids having a blast bringing their ideas to life in 3D."

Google SketchUp is CAD software that allows anyone to create a 3D design. Google SketchUp has a free version and one that requires a license. Google SketchUp allows individuals to design in an open form and has access to a warehouse of designs (chairs, houses, etc.). Google SketchUp is used engineers, architects, and schools. To use Google SketchUp you need an account and there is a cost to one version.

OpenSCAD – openscad.org

"OpenSCAD is a software for creating solid 3D CAD models. Unlike most free software for creating 3D models (such as Blender) it does not focus on the artistic aspects of 3D modelling but instead on the CAD aspects."

OpenSCAD is a CAD software that allows users to create 3D designs. OpenSCAD is not an interactive modeler, like TinkerCAD, but instead lets individuals design using a script file. This type of software allows individuals to have full control over the modeling process. OpenSCAD is a free software and can be downloaded without an account.

Autodesk123D – www.123dapp.com

"The Autodesk 123D community is a place to design, create and share anything."

Autodesk is a community that provides a number of apps and programs that can aid the 3D printing process. These apps include 123D Catch, 123D Design, 123D Sculpt+, and 123D Make. One example, 123D Catch can be used to create a 3D scan of an item that can then be printed. Each application is extremely user friendly and available at no or low cost. Autodesk is the same company that manages TinkerCAD.com.

Blender – blender.org

"Blender is the free and open source 3D creation suite. It supports the entirety of the 3D pipeline—modeling, rigging, animation, simulation, rendering, compositing and motion tracking, even video editing and game creation."

Blender is 3D design software that allows users to create designs using geometric shapes or a "block of clay" method. Blender supports a number of different 3D file formats and can be used to convert files from one format to another in order to 3D print models from a variety of sources. Blender is a free software.

Sculptris – pixologic.com/sculptris

"Sculptris provides an excellent gateway into the exciting world of 3D."

A software that allows individuals to make 3D designs by using sculpting techniques vs. geometric shapes. Designers can begin with a "block of clay" and can create a design by shaping it using online tools to remove clay, extend clay, and carve clay. This software is an excellent way to create more detail in designs or to create animals, monsters, and creatures that you want to use to create digital art. This software has less restrictions on how and what can be created compared to a CAD software. There is a free version of the software as well as an extended edition that is available for purchase.

Thingiverse – thingiverse.com

"MakerBot's Thingiverse is a thriving design community for discovering, making, and sharing 3D printable things. "

Thingiverse is a website where one can post their 3D designs for others to download. You can search the Thingiverse website for any item you are interested in and download it for printing. Individuals can also download items, modify them in CAD software, and post their new design or use it for 3D printing. You do not need an account to download items from Thingiverse but do need an account to post.

Youmagine – youmagine.com

"At YouMagine you can print existing designs, but we'd love for you to give designing a try yourself. With our easy design tool that will be available soon, creating your ideas becomes a piece of cake."

Youmagine is a website where individuals post 3D designs for other to download. The website offers information about the designer of the model and ways some models could be used in education. Individuals can post their designs for other to download.

GrabCAD – grabcad.com

"GrabCAD is leading the Open Engineering movement, helping engineers get products to market faster by connecting people, content and technology."

GrabCAD is a website that allows individuals to post 3D designs for others to download. The majority of GrabCAD users are engineers, however it does have the ability to join as an educational account user. GrabCAD also has a design software called GrabCAD Workbench that allows for collaborative 3D designing from different users. GrabCAD has a free version as well as a version that costs a fee to use.

Maker Ed – makered.org

"Maker Ed is a non-profit organization that supports and empowers educators and communities — particularly, those in underserved areas — to facilitate meaningful making and learning experiences with youth."

A website that offers resources and project ideas educators interested in the Maker movement. The website does not focus only on 3D printing, but does have a number of 3D printing project ideas. It also includes education resources and techniques one can use in order to implement Maker projects.

MIT Fab Lab Community – fabfoundation.org

"Our mission is to provide access to the tools, the knowledge and the financial means to educate, innovate and invent using technology and digital fabrication to allow anyone to make (almost) anything, and thereby creating opportunities to improve lives and livelihoods around the world."

MIT Fab Labs are communities of individuals that are participating in the Maker movement. The Fab Labs is funded by the Fab Foundation that has grown from MIT's Center for Bits & Atoms Fab Lab Program. Fab Labs educate youth and adults on how to use technology related to the Maker movement and provide access to the technology needed to complete Maker activities. Local labs are located throughout the US and are a good resource for information, supplies, and possibly volunteers.

Local MakerSpace or HackerSpace – makerspace.com and hackerspaces.org

"MakerSpace is a new online community that connects makers to makers and allows them to share ideas and projects."

Makerspace and Hackerspace are communities of individuals that are participating in the Maker movement. Through these sites you can find individuals from the across world and in your local community that are passionate about the Maker movement and are willing to share their knowledge and information about different aspects of the movement. Local labs are located throughout the US and are a good resource for information, supplies, and possibly volunteers.

Maker Camp – makercamp.com

"Maker Camp is designed to get more kids making more, and to support the adults who want to introduce the joy of making to a million makers."

A website that offers Maker projects and activities in a camp format including enough activities to hold 6-weeks of Maker camps, either online or in person. The site includes instructions, videos and fieldtrip ideas that focus not only on 3D printing but many Maker projects. You can review activities from the current year's Maker camp as well as past years.

Make: Magazine – makezine.com

"Through media, events and ecommerce, Maker Media serves a growing community of Makers who bring a DIY mindset to technology."

A magazine dedicated to the Maker movement. Each month a new edition is published and includes projects that are simple and can be done at home or in a program to more extensive projects could be completed over a number of sessions. Make: magazine includes articles on Maker's and projects they have completed and their stories behind the ideas. This magazine includes 3D projects but is not specifically dedicated to 3D printing. There is a cost for a subscription.

Maker Faire – makerfaire.com

"Part science fair, part county fair, and part something entirely new, Maker Faire is an all-ages gathering of tech enthusiasts, crafters, educators, tinkerers, hobbyists, engineers, science clubs, authors, artists, students, and commercial exhibitors."

Maker Faire are an opportunity for Makers to exhibit their work and projects. This is also an opportunity for the community to visit and learn more about the movement and possible Maker projects or activities. Maker Faires can give educators the opportunity to learn about the movement and find local resources as well as give youth an opportunity to exhibit their projects after they have taken part in Maker activities.

Do you have questions about to incorporate these resources into your 3D printing program contact:

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