LA COUNTY LIBRARY

# DIY Library Program

## INTRODUCTION TO 3D DESIGN WITH TINKERCAD

BUILDING SKILLS FOR THE CREATIVE ECONOMY

*Recommended for Ages 11 – 18 and Educators*

Many people are unaware of the ways in which they could combine their creativity and computer skills in certain industries, and that such jobs are financially sustainable in the current economy. Learning 3D and computer-aided design can be a springboard to future careers and freelance jobs in engineering, construction, design, transportation, and even medicine. Today, 3D printers are being used to create items such as clothing, cars, houses, and even human organs!

Learning CAD (computer-aided design) will be a huge benefit in creative economy careers, and Tinkercad is a great place to start! Tinkercad is a free, easy-to-use online 3D CAD modeling program. All you need is an Internet connection and you can quickly turn your idea into a CAD model for a 3D printer with Tinkercad. Educators can also set up individual Tinkercad classes, projects, and activities for their students.

**Materials Needed**

- Electronic device (computer, tablet, smartphone) with Internet connection
- Email address or other online account (for example: Google) to set up a Tinkercad account

**Instructions**

1. Create your own account at: www.tinkercad.com/join. Sign up with email, or sign in with a personal account from Google, Microsoft or Facebook.

   Educators can set up Tinkercad classes for their students by selecting the "Educators Start Here" option. Students can select the "Join a Class" option and follow the instructions.

2. Start learning how to create 3D designs by reviewing the “Design Learning Page” for Starters, Lessons, and Projects: www.tinkercad.com/learn/designs.

   You can start off with your basic 3D shapes (cones, pyramids, cubes, etc.) then build up to more complex and fun projects such as designing your dream pizza or an international space station.

3. Get helpful tips and more on the Tinkercad blog:
    - Blog.tinkercad.com/tag/new-to-tinkercad
    - Blog.tinkercad.com/getting-started-in-tinkercad

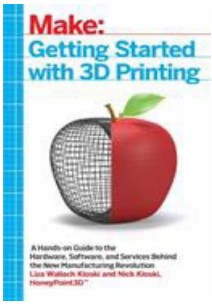
**Additional Tinkercad Resources**

- Resource Page for Educators – https://blog.tinkercad.com/2019/08/05/introducing-tinkercad-classroom/
- Keyboard Shortcuts – https://blogdottinkercaddotcom.files.wordpress.com/2018/08/tinkercad-keyboard-shortcuts_revised-8-31-182.pdf
- List of other Tips & Tricks – https://blog.tinkercad.com/tag/tips-tricks
- Help Center – https://tinkercad.zendesk.com/hc/en-us

**DIGITAL RESOURCES AVAILABLE THROUGH LA COUNTY LIBRARY**

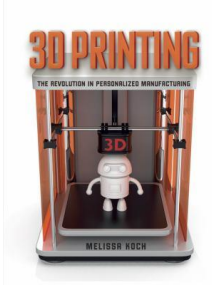
**eBooks & Audiobooks**

LA County Library offers numerous resources that can help you learn more about 3D printing and how to apply creativity to technology. Here are just a few, all of which are available as eBooks on OverDrive and Libby:



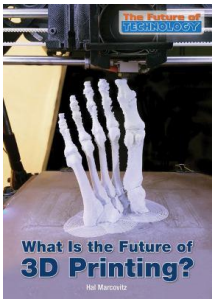

***Getting Started with 3D Printing: A Hands-on Guide to the Hardware, Software, and Services Behind the New Manufacturing* by Liza Wallach Kloski and Nick Kloski**

This title is a practical, informative, and inspiring book that guides readers step-by-step through understanding how 3D printing technologies will empower them to take full advantage of all it has to offer. The book includes a section on how to apply 3D printing in the readers' life and profession.

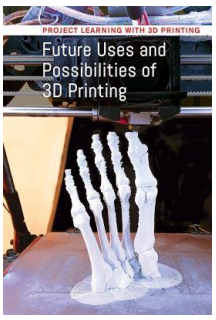



***3D Printing: The Revolution in Personalized Manufacturing* by Melissa Koch**

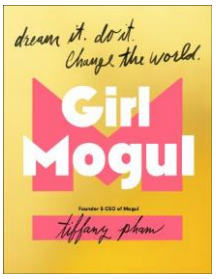
This comprehensive overview of 3D printing, presented from a manufacturing angle, covers a tremendous amount of information in an engaging, easily digestible format. Learn about 3D printing technologies and materials, intellectual property challenges, environmental concerns, and more.




***What is the future of 3D printing*** **by Hal Marcovitz**
This practical, informative, and inspiring book guides readers step-by-step through understanding how 3D printing technologies will empower them to take full advantage of all it has to offer. The book includes a section on how to apply 3D printing in the readers' life and profession.




***Future Uses and Possibilities of 3D Printing*** **by Jeri Freedman**
This title looks at where 3D printing is going and what students can expect to do if they learn how to use this in-demand skill.




***Girl Mogul: Dream It, Do It, Change The World*** **by Tiffany Pham**
No matter who you are or your background, this book can help you define success, envision it, and make it happen – in school, your personal life, and at work. Pham, who taught herself to code and launched onmogul.com as a community for women, offers advice to teen girls, using stories from her own life and other successful women, to show that there are no limits to what one can do.

**Online Learning**

Want to learn more about Tinkercad? Take a class on Lynda.com! There are courses on Tinkercad, 3D printing at home, and more.
https://www.lynda.com/portal/sip?org=lacountylibrary.org&triedlogout=true

Learn about the relationship between 3D design and engineering by watching *Do-It-Yourself Engineering* from The Great Courses on Kanopy.
https://lacounty.kanopy.com/video/do-it-yourself-engineering

## ADDITIONAL RESOURCES

### Suggested YouTube videos

- What is Tinkercad – https://youtu.be/ZMe22tYVisI
- How to Use Tinkercad 3D Design Software 101 – https://youtu.be/sh4o9k599pQ

### Suggested YouTube videos for Educators

- How to use Tinkercad in Schools – https://youtu.be/NqkZFCj8ndU
- Tinkercad Teachers Webinar Series, created by Tinkercad's designers – https://www.youtube.com/playlist?list=PLV6cmKvnKRs4l7FF0kieb84rl3C3L2sbS