



3-D Printing Design Challenge

Learn to use Tinkercad to design a useful object that could be 3-D printed in the Illinois 4-H 3-D Printing Design Challenge!

In this challenge, youth will:

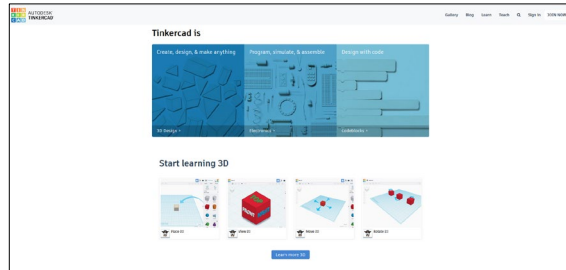
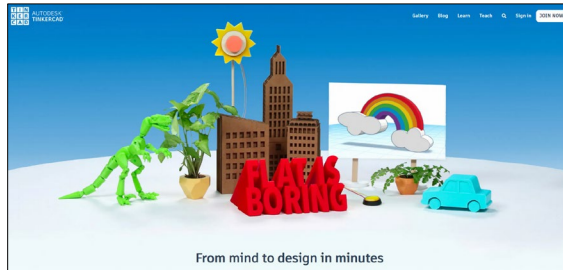
1. Get familiar with CAD programs, including grouping, aligning, and examining projects from all sides
2. Learn free online software to design products that could be 3-D printed
3. Create something uniquely their own

Challenge resources:

- [Tinkercad Software](#) (Autodesk)
- [Let's Learn Tinkercad Tutorial](#) (Autodesk)
- [Tinkercad Basic Skills Tutorials](#) (Autodesk)

Challenge details:

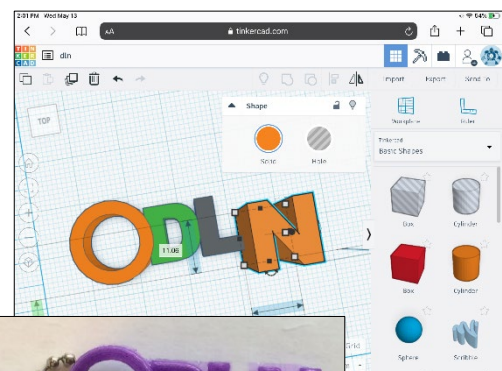
Visit <https://4h.extension.illinois.edu/programs/home-activities> to get access to the challenge information. With your parents' permission, register on <https://www.tinkercad.com/learn>. (Adult permission is required for the establishment of a tinkercad.com account to save your design.) Be sure to click the "Join Now" button in the top right corner, set up a personal account, and sign in to begin. Use the "Challenge resources" links above to learn how Tinkercad works and learn about some basic skills.



After exploring and completing some Tinkercad tutorials (in the Learn tab), use Tinkercad to design your object. Consider having your object meet the following specifications:

- Design something that can serve a purpose and not be just decorative.
- Design it to fit a build area of 8 cm x 8 cm x 8 cm.
- Design it to be printable in a solid color.
- The design should be safe for children over 3 years of age and for observers, pets and property, having no sharp corners or edges. If printed, the object must be kept out of reach of children under 3 years old.

Our sample project was a keychain with initials. Here it is in both the design process and once it was printed. >>>



Illinois 4-H At-Home STEM Challenge

Once your design is complete, with parent/guardian permission, you can share your Tinkercad file (.stl) on social media tag "Illinois 4-H" and/or use the hashtag #thats4H, or share it with your 4-H club, family and/or friends. You also could contact your local Extension office, school, or library to see if they have resources available to help you 3-D print your design.

Questions?

Email dnuger@illinois.edu or visit <https://4h.extension.illinois.edu/programs/home-activities>

Want to learn more about 4-H near you?

Find your local 4-H office at go.illinois.edu/FindYour4HOffice or learn more about Illinois 4-H at 4h.extension.illinois.edu

Did you have fun with this challenge?

Check out this 4-H project at <https://4h.extension.illinois.edu/members/projects/technology-3d-printing-design>



Resource originally produced by Donna Nuger for DuPage, Kane & Kendall County 4-H.

If you need a reasonable accommodation to participate in this program, please contact your local University of Illinois Extension office.

Early requests are strongly encouraged to allow sufficient time for meeting your access needs.

University of Illinois Extension provides equal opportunities in programs and employment.

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