

## TINKERCAD – APP FOR 3D DESIGN, ELECTRONICS AND CODING

Mieriezhko M.

Supervisor: Bocharov B.

*E-mail: mmieriezhko@outlook.com, boris.bocharov@kname.edu.ua  
Kharkiv, O. M. Beketov National University of Urban Economy in Kharkiv*

The online service TinkerCAD, created by a Finnish company of the same name, provides for the creation of 3D models in an application running in a browser and transferring them to 3D printing. TinkerCAD was developed based on WebGL technology, so no additional applications are required to work with it, just a browser is enough. Group work, exchange of ready-made results, integration with popular catalogs of 3D models and remote 3D printing systems are supported. [1]

TinkerCAD was launched as a startup in 2011, the authors of the project are Kai Beckman and Mikko Mononen. In May 2013, all TinkerCAD assets were taken over by Autodesk.

TinkerCAD is a free tool and can be used by beginners as a simple medium for building the first 3D objects and preparing them for 3D printing. In the editor there is a library of ready-made elements, which simplifies the rapid creation of models. All tools are free. To work in the service, you need to get an Autodesk account. [2]

The TinkerCAD simulation environment consists of the following components:

- Electronic circuit editor.
- Emulator of the main electronic components.
- Arduino controller emulator.
- Sketch Editor, including visual.
- System debugging and simulating projects using Arduino
- Import SVG to make it three-dimensional. Only visible layers are imported, and objects, such as text, must be converted to paths.
- Form generators. For example, simple extrusion, defined by four points and eight curve handles or different shape generators.

It has a very friendly, intuitive, modern and easy to use interface, which in a short time will allow you to create complex models of figures.

TinkerCAD has been recognized as the best teaching and learning website by the American School Librarian Association (AASL). [3]

TinkerCAD also collaborates with Girls in Tech to inspire and enable next-generation women to imagine, create and improve the world. Girls in Tech is a global non-profit organization focused on engaging, educating and expanding opportunities for girls and women who are passionate about technology. [4]

If you have a printer and want to create your first models in a simple, fun way and without investing a dollar, register on the tinkercad website and try it out. If you are doing complicated designs, maybe it is not the best option.

Thus, TinkerCAD provides users with the ability to create quite complex things from simple blocks. Develops in the areas of prototyping, electronics and robotics.

### References

[1] Tinkercad – PLMPedia [Electronic resource]. – Resource Access Mode: <http://plmpedia.ru/wiki/Tinkercad>

[2] Tinkercad – Wikireality [Electronic resource]. – Resource Access Mode: <http://www.wikireality.ru/wiki/Tinkercad>

[3] A Best Website for Teaching & Learning [Electronic resource]. – Resource Access Mode: <https://blog.tinkercad.com/2018/06/29/tinkercad-honored-as-a-best-website-for-teaching-learning-by-aasl/>

[4] Girls in Tech Global Classroom [Electronic resource]. – Resource Access Mode: <https://blog.tinkercad.com/2018/08/09/girls-in-tech-global-classroom/>