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Eggbot

Tue, 15/10/2019 - 11:58 -- Chloe Souter

Type of tool:

Activity

Duration:

30-60 min

Topics addressed:

Digital

Social inclusion

The EggBot is a numerically controlled machine which is able to transfer digital designs to spherical objects, such as ping pong balls or eggs.

Aim:

The EggBot is mainly used to introduce young people to the world of digital manufacturing. The advantage of using an eggbot rather than a 3D printer, or a laser cutter, is that the former requires a very modest amount of resources as well as the cost being relatively low.

An EggBot workshop allows you to tackle a lot of notions related to computer science and digital sciences, including:

- Vector drawing
- Graphics software
- Gcode (the language used by computers to communicate with numerically controlled machines)
- Fast prototyping
- Robotics
- Electronics
- Programming

It is also possible to use the EggBot in the context of a Fablab or Makerspace. Young people can first learn how to use an EggBot, then tackle other digital tools that require a higher level of technical mastery.

Methodology:

The tool is based on the methodology of "Maker Education". The tool invites young people to experiment with vector drawing software, computer programming software, while focusing attention on a playful and artistic approach.

Step by step process:

The EggBot makes it possible to transfer digital drawings onto spherical objects.

First, the young participants are invited to experiment with a free vector drawing software. They learn what a vector is, how to scan non-vector images. The idea is to introduce them to using such drawing software which they can subsequently use in many different contexts, including to produce

communication media.

The second step is to transform the digital drawings into computer code, which will then be routed to the machine itself to produce the exact copy of the digital drawing, this time on a spherical object (eg an egg).

A complete eggbot tutorial is available here:

<https://docs.google.com/document/d/1SXMLvdZ9qexbAdg3ZqJR4hX4paM5TWjZe23u...> [1]

Materials and resources:

For a group of 10 children:

- 1 EggBot
- One computer per child
- Inkscape software will need to be installed on each computer
- Basic building tools (precision screwdrivers, allen keys)

Outcomes:

The participants will gain knowledge and experience with vector drawings, graphics software, computer language and the operations of a CNC machine.

The EggBot is a rapid digital prototyping machine, which allows educators to approach notions of digital manufacturing more generally. It is possible to use the EggBot as part of educational workshop around 3D printing and laser cutting.

It is also possible to approach the concept of digital DIY, since the EggBot is assembled from including 3D printed parts, and uses an open source programmable board.

Rating:

No votes yet

Documents/handouts:

 [Eggbot.docx](#) [2]

 [EggBot instructions v3 TF.pdf](#) [3]

Source URL: <https://educationaltoolsportal.eu/en/tools/eggbot>

Links

[1] <https://docs.google.com/document/d/1SXMLvdZ9qexbAdg3ZqJR4hX4paM5TWjZe23umJpGROk/edit?usp=sharing>

[2] <https://educationaltoolsportal.eu/en/system/files/documents-handouts/Eggbot.docx>

[3] <https://educationaltoolsportal.eu/en/system/files/documents-handouts/EggBot%20instructions%20v3%20TF.pdf>