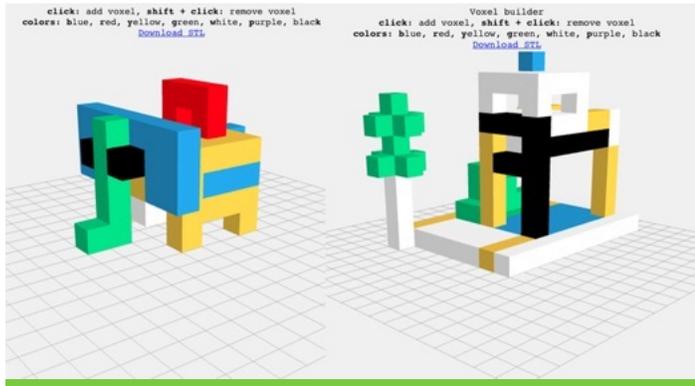


Keychains block-by-block



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Public

7-12 y-0

Software

Cubecraft

Description

Learning goals:

- master the basics of block-by-block modeling
- develop a capacity for creativity in 3D

The goal of this workshop is to provide a space for imagination by creating objects built up from small blocks, similar to the popular game *Minecraft*.

Timing

1. Introduction and presentation of 3D printing - 15 mins

Introduction of the world of 3D printing with video (<http://www.dragontape.com/#!/6319966877908992>) and presentation.

2. Overview of the activity - 5 mins

Briefly explain the flow of steps for the day's activity.
What will the participants do? : Create a keychain
Which software will be used? : Cubecraft

3. Open Cubecraft for all participants - 2 min

Open Cubecraft (<http://cubecraft.technoculture.club>) in a web browser

4. Introduction to Cubecraft - 5 min

click : add a block
click + shift : remove a block
colours : **b** (blue) **y** (yellow) **r** (red) **g** (green) **w** (white) **k** (black) **p** (purple)
click "Download STL" : to download the .STL file for 3D printing

For more information, see the instructions here : Cubecraft

5. Create a 3D model in Cubecraft - 10 mins (animateur)

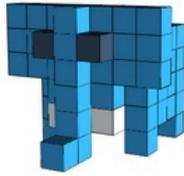
Facilitation plan

The facilitator will run through the entire 3D modeling process to demonstrate the software. Participants watch while the facilitator describes what they are doing. The facilitator asks participants to follow along, up until the 3D printing step.

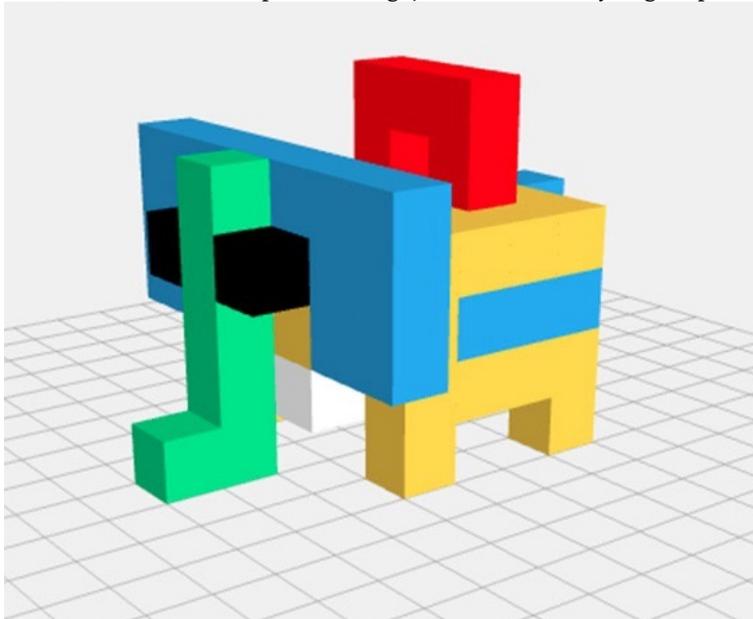
After launching the 3D print of the demo model, participants create their own 3D model. The facilitator moves around the room to assist and re-explain concepts as necessary. Demonstrate common questions or repeat challenging concepts to all participants.

Example of an elephant

1. Use the provided reference of a block-modeled elephant



2. Place the blocks, starting with the feet, then the body, the head, the ears, the eyes, and finally the trunk.
3. Add 5 blocks in the shape of a bridge, to create the keyring loop.



6. Saving the STL file

Warning!

- The software saves all cubes which are on the workplane. In other words, it's not possible to select a single object.
- It is preferable to open a new cubecraft tab if one wants to create a second object.

Use a USB key to gather the STL files from participants.

7. Import the files in Tinkerine or Cura - 5 min

Open the preferred slicer software

Import the STL file

Adjust the print settings (fill, wall thickness, speed, height, ...)

Save the file (.Gcode) to the SD card

8. 3D Printing - 30–45 mins

Insert the SD card in the 3D printer

Select the previously saved file (.Gcode)

Start the print!

9. Feedback - 5 min

Ask the participants to provide feedback on the workshop while the models are being printed.

Participant's guide

1. Instructions

click : add a block

click + shift : remove a block

colours : **b** (blue) **y** (yellow) **r** (red) **g** (green) **w** (white) **k** (black) **p** (purple)

click "Download STL" : to download the .STL file for 3D printing

2. Good to Know

- The software saves all cubes which are on the workplane. In other words, it's not possible to select a single object.
- It is preferable to open a new cubecraft tab if one wants to create a second object.