

Zoe Romano- Fabricademy

Modular Fashion



wemake.cc
#makerspace
#fablab

Modular fashion is an approach to the production of accessories and garments using **vector graphic** design of bidimensional **lasercut** modules.

They are then **interlocked** to create complex 3d **seamless** geometries.

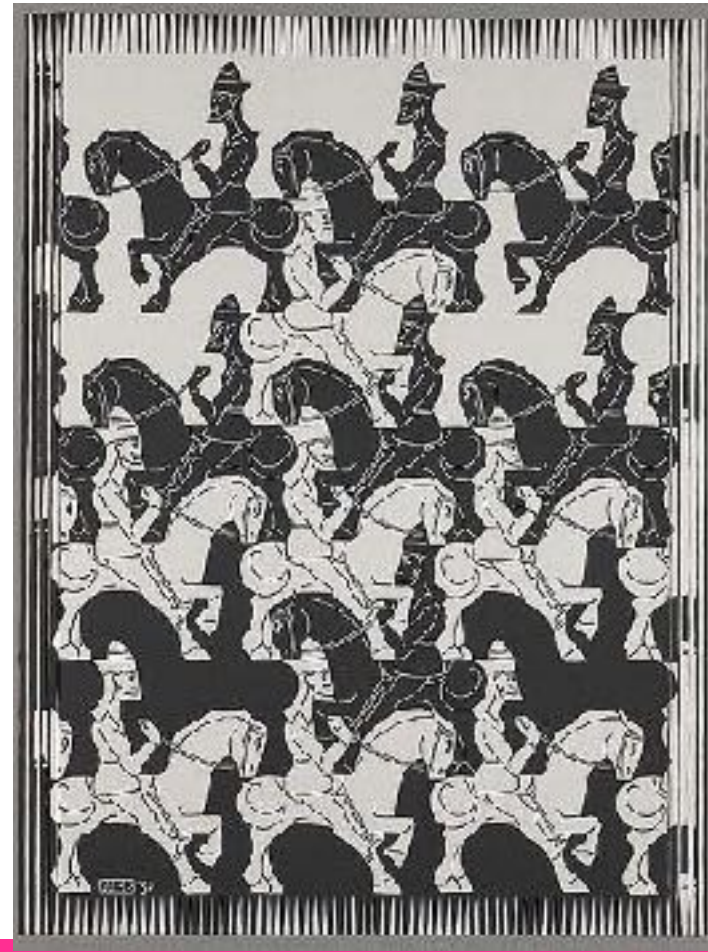
What is modular fashion?

In plane geometry, we call **tessellation** the ways of filling a plane with various geometries, infinitely replicated without overlapping or gaps.

Nature



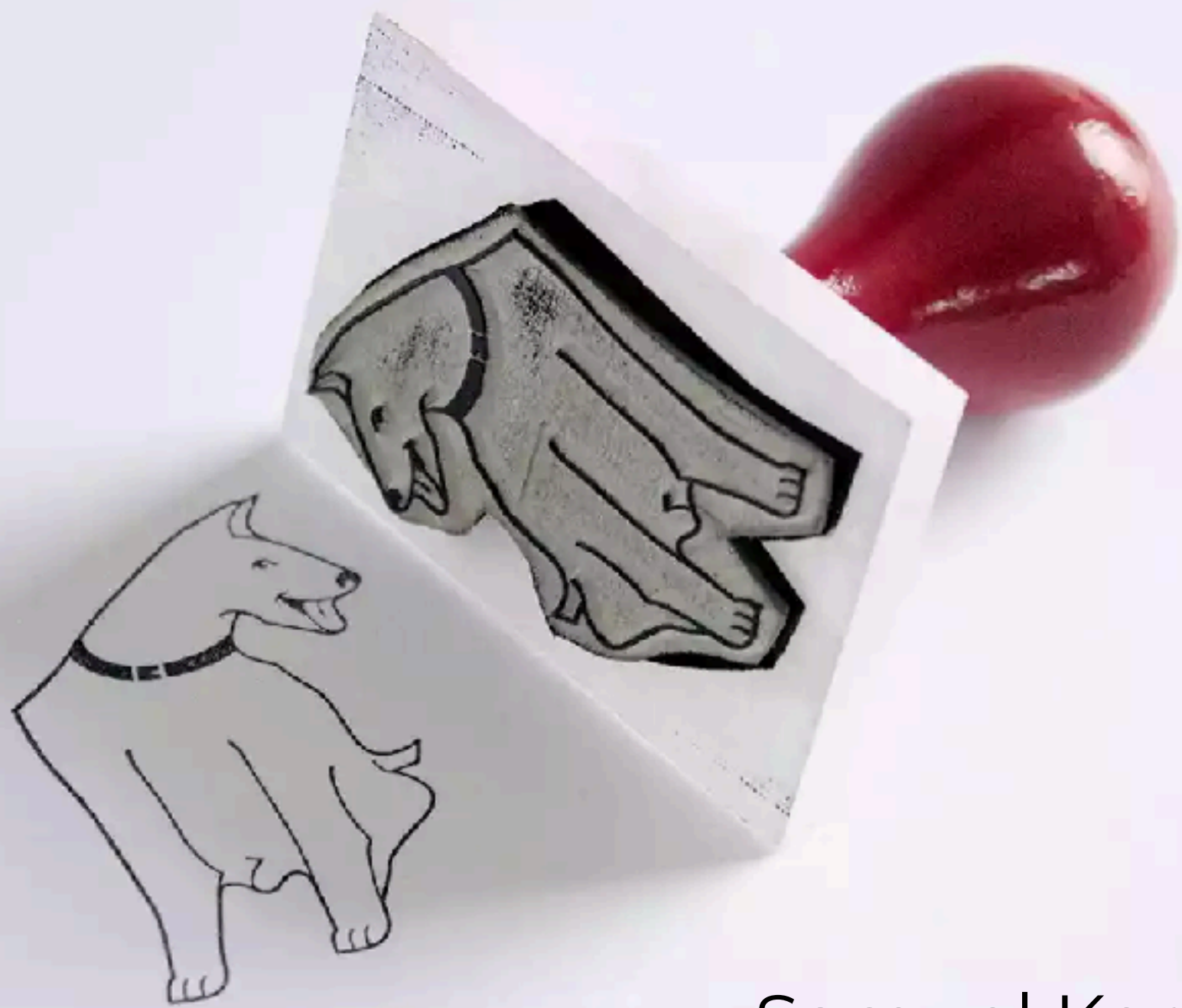
Art/Illustration



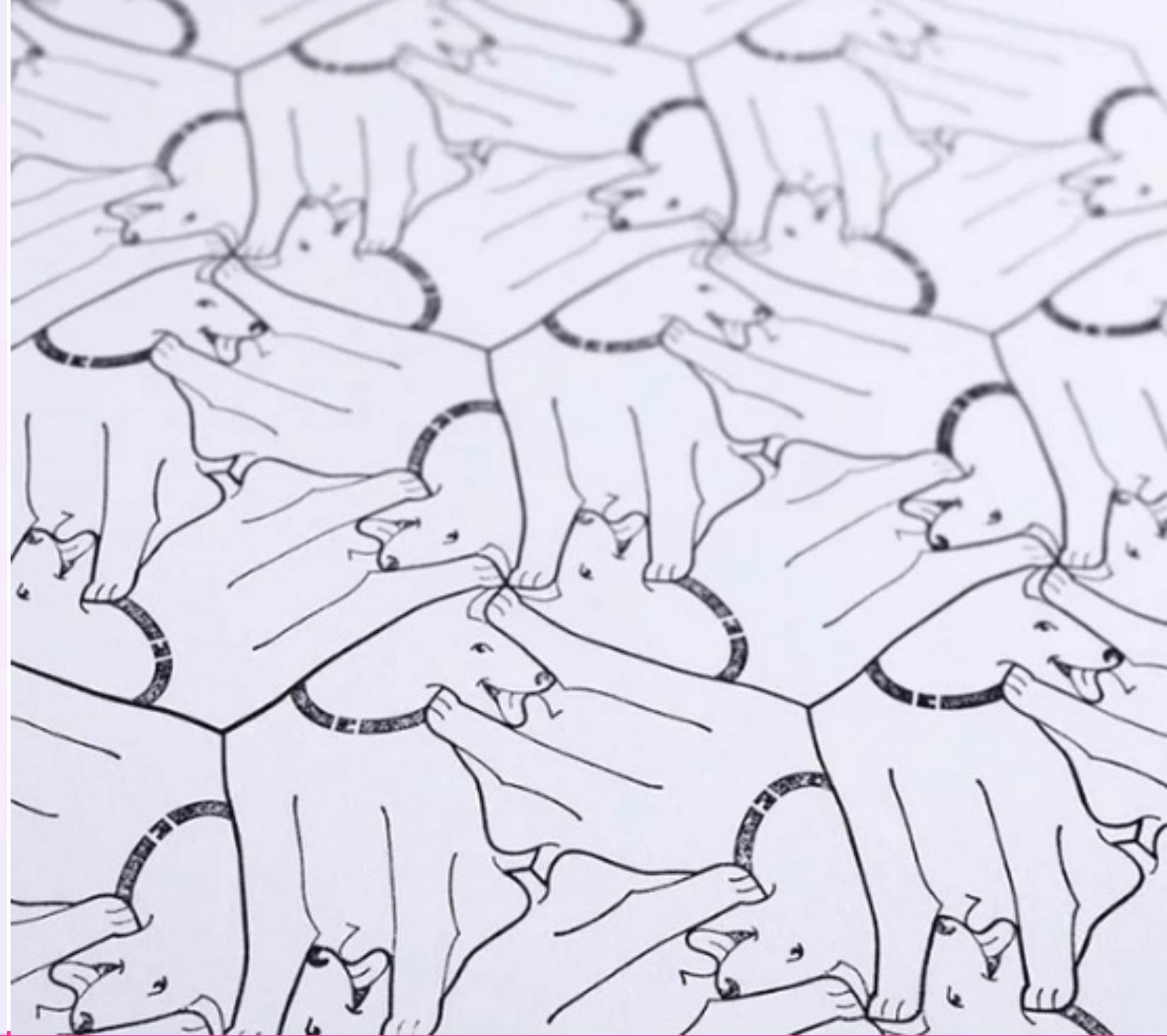
Architecture



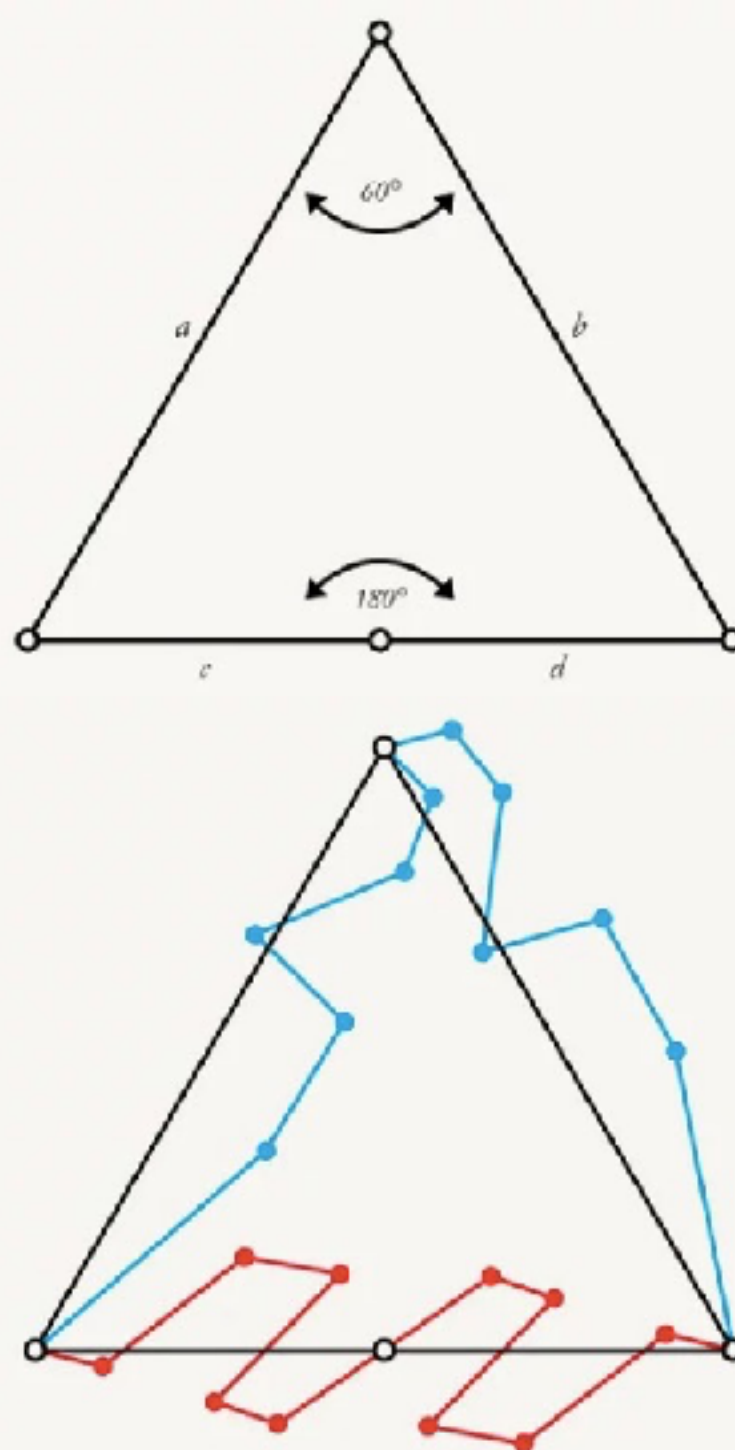
Tessellation and geometry



Samuel Kerr



Tessellation and geometry



Samuel Kerr

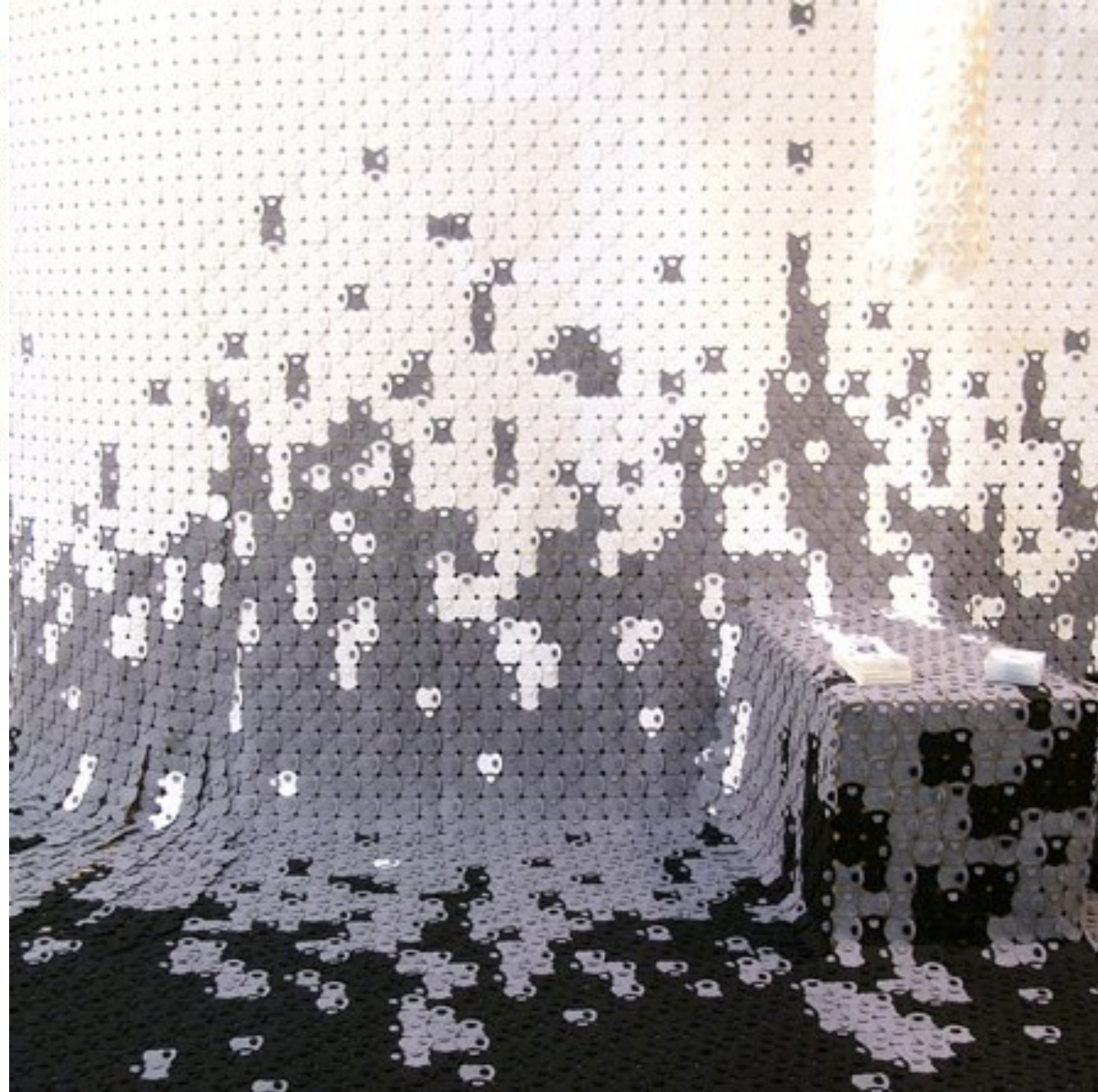
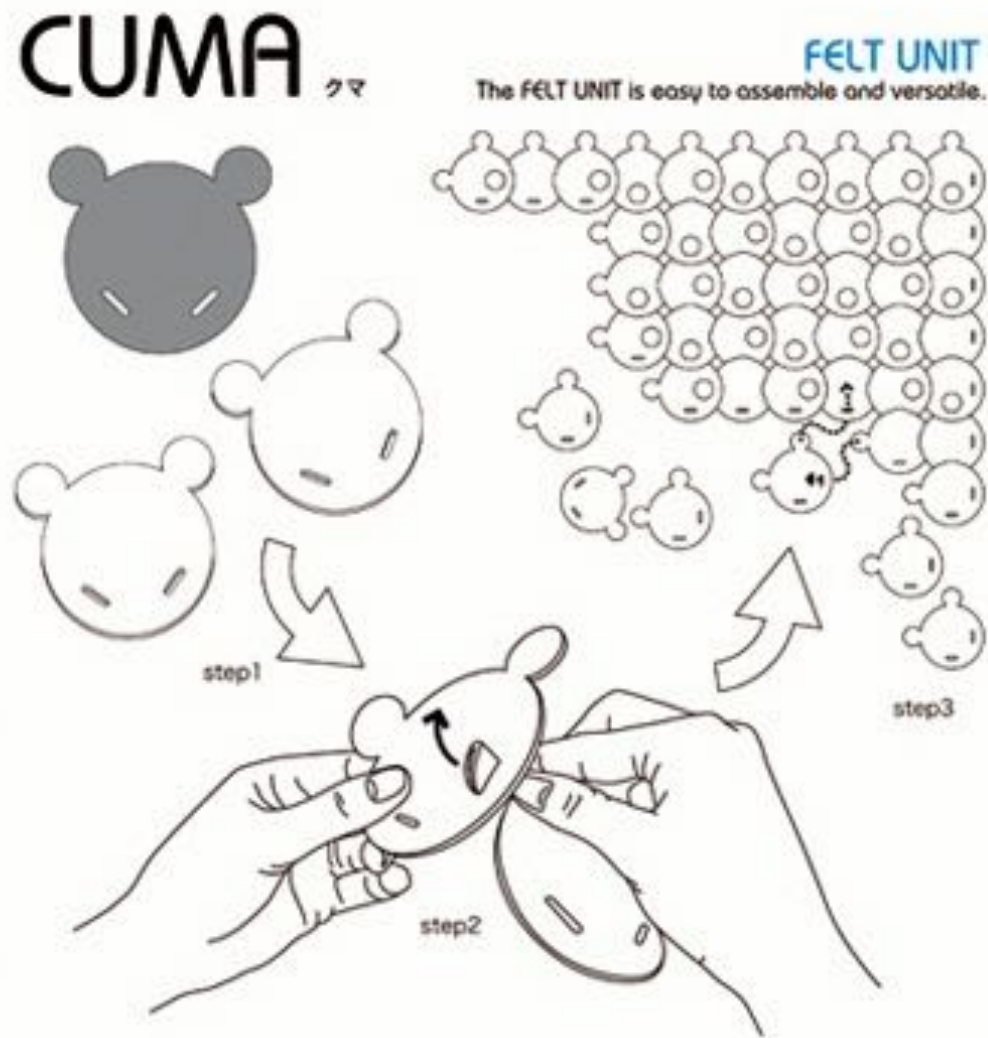


Tessellation and geometry

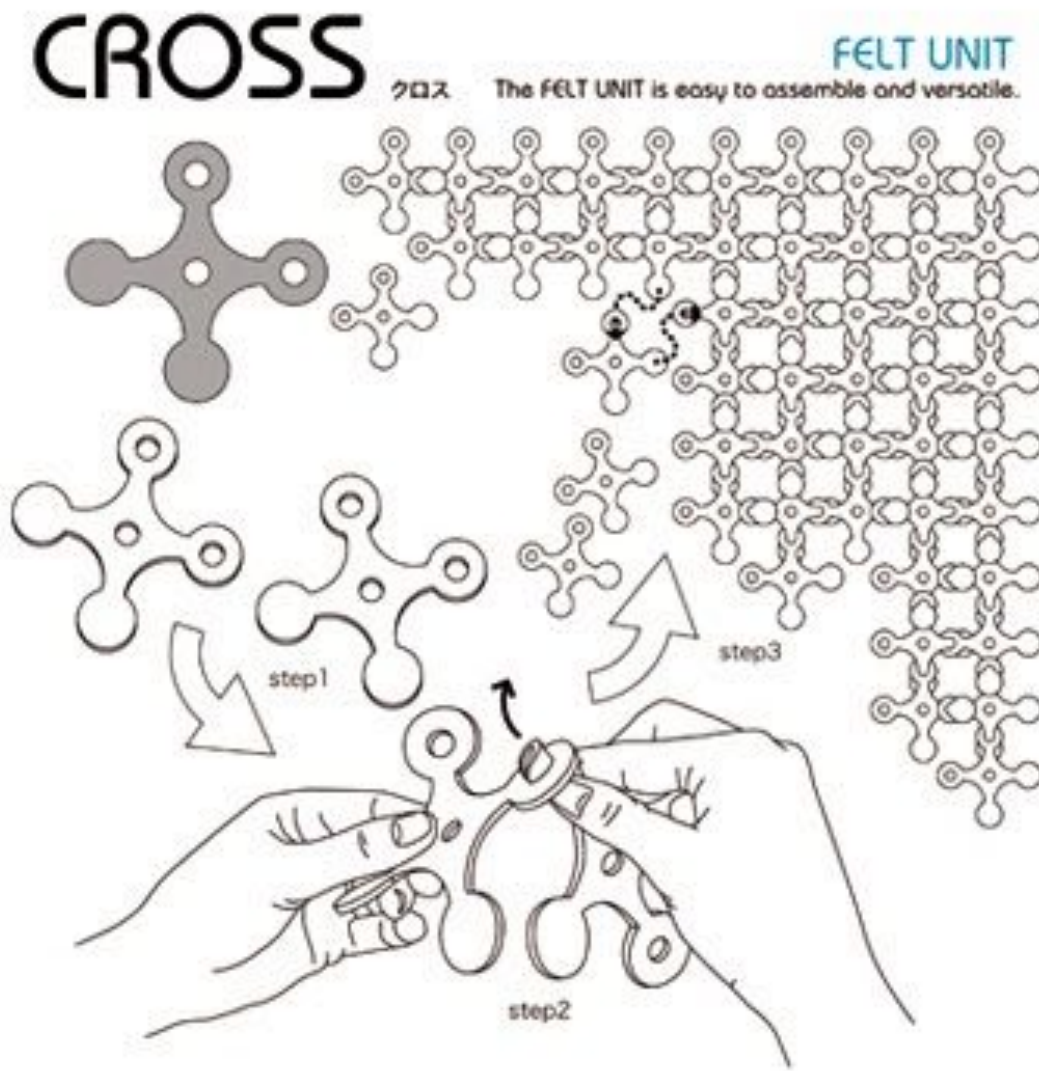
Any alterations made to the left side are copied and rotated 60° to the right side, so that each side is a perfect fit for each other. The bottom side is divided in half with any edits made to one half copied and rotated 180° to the other, again making them perfect fits. These applied rules are ultimately what will allow the tile to repeat infinitely.

Moda modulare - Examples

TAKEHIRO ANDO

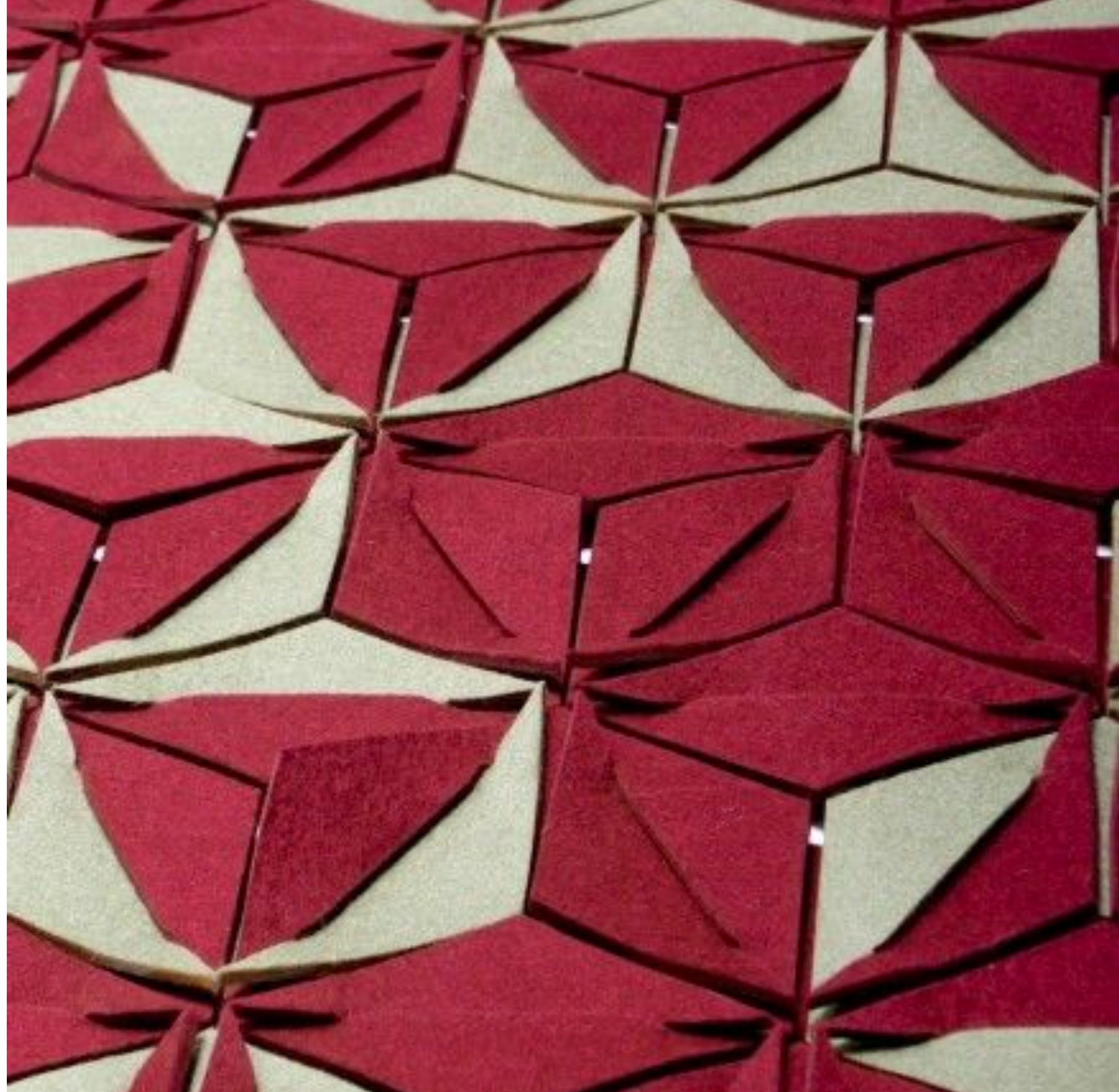


TAKEHIRO ANDO

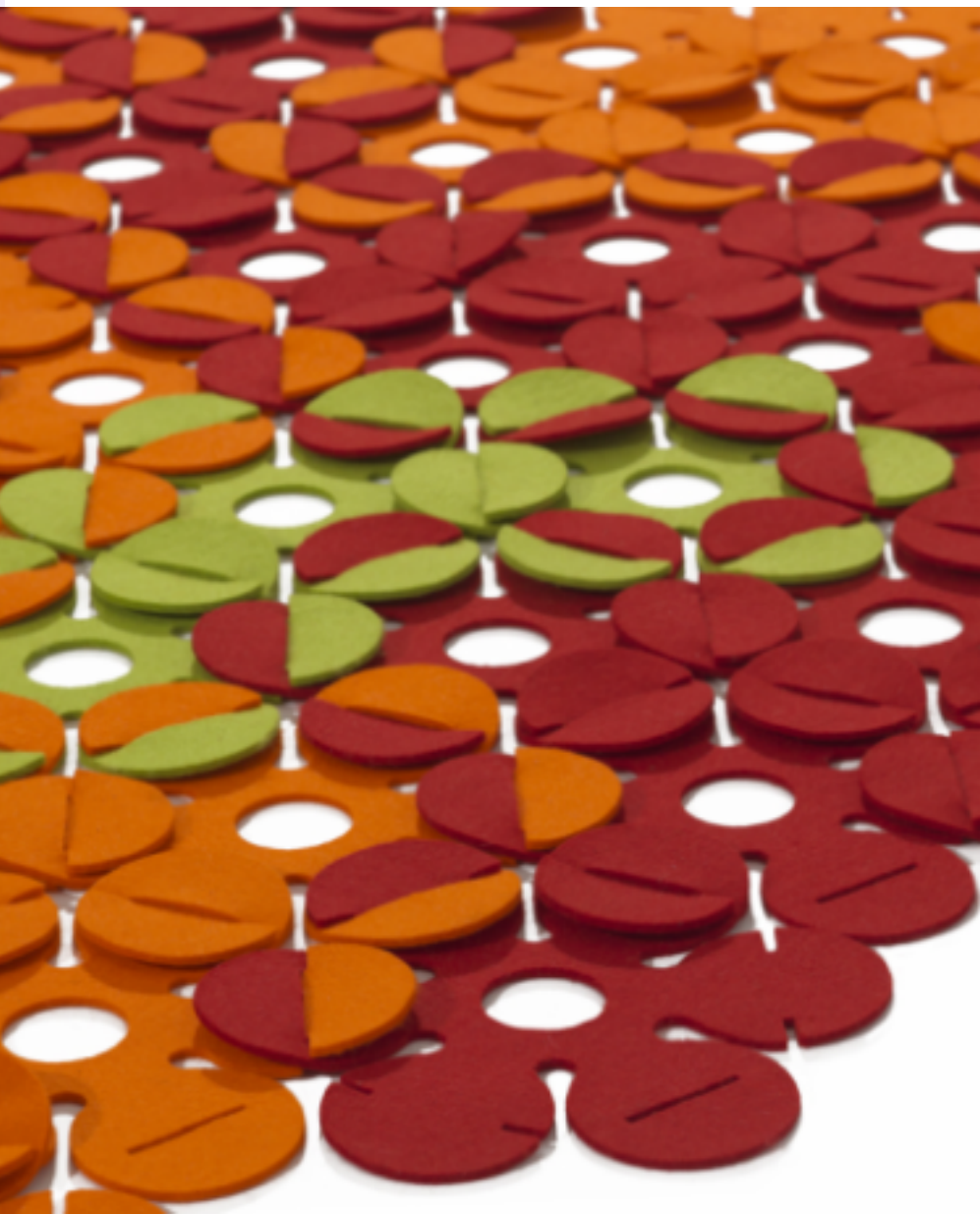


BERBER SOEPBOER





NASIA BURNET



SARAN YUUKONGDEE



MARY ANN WILLIAMS



KOSUKE TSUMURA



MATIJA COP

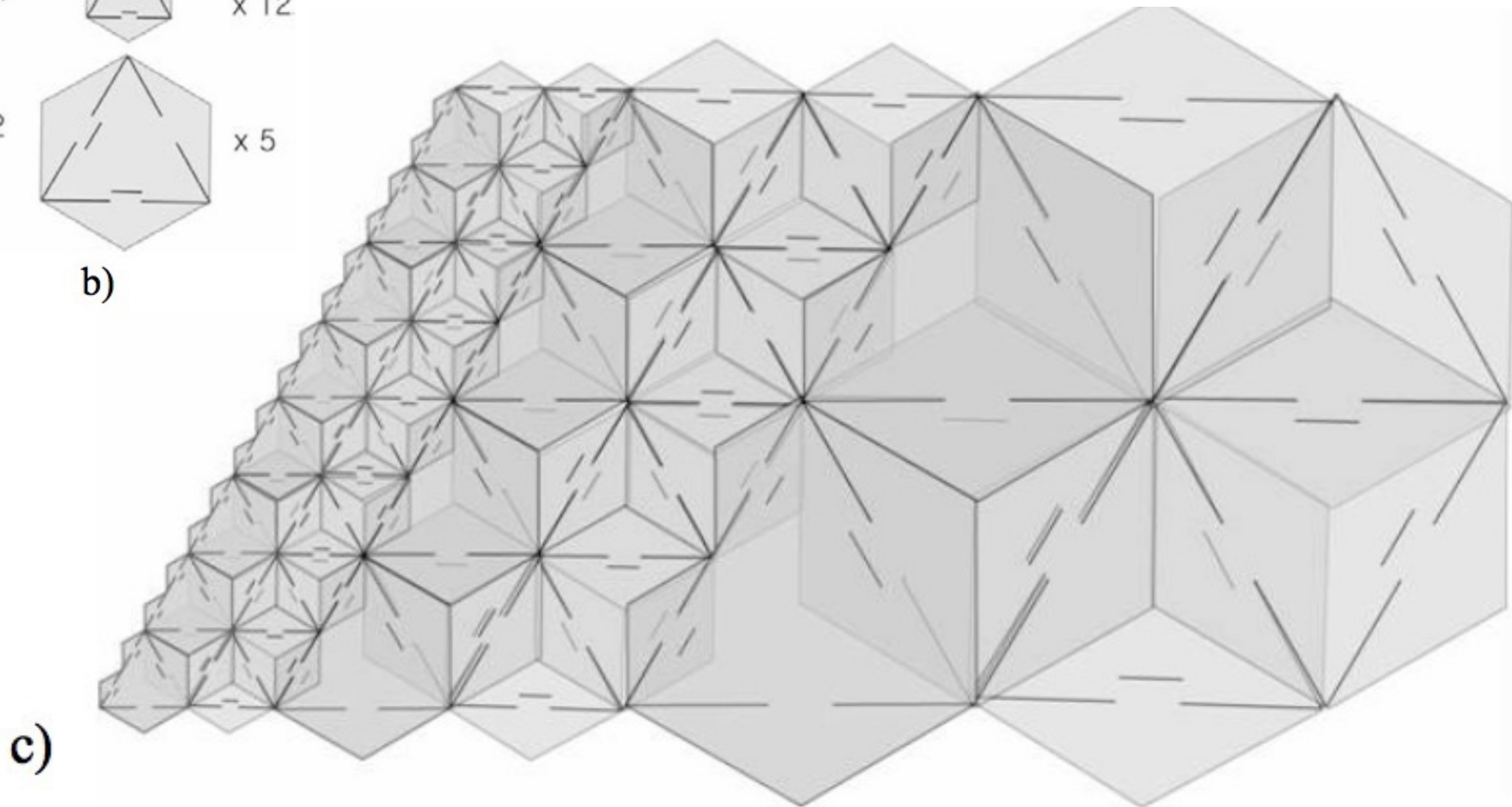
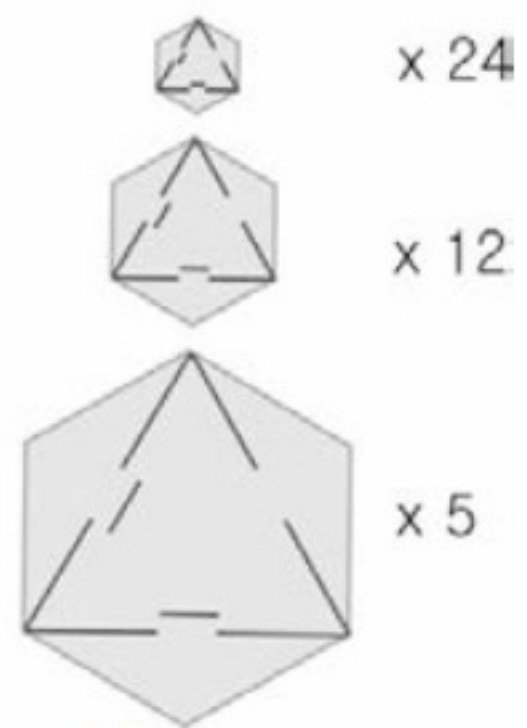
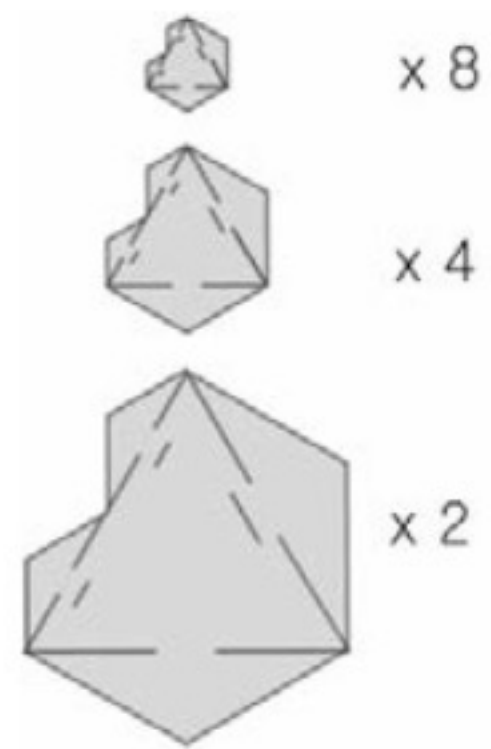


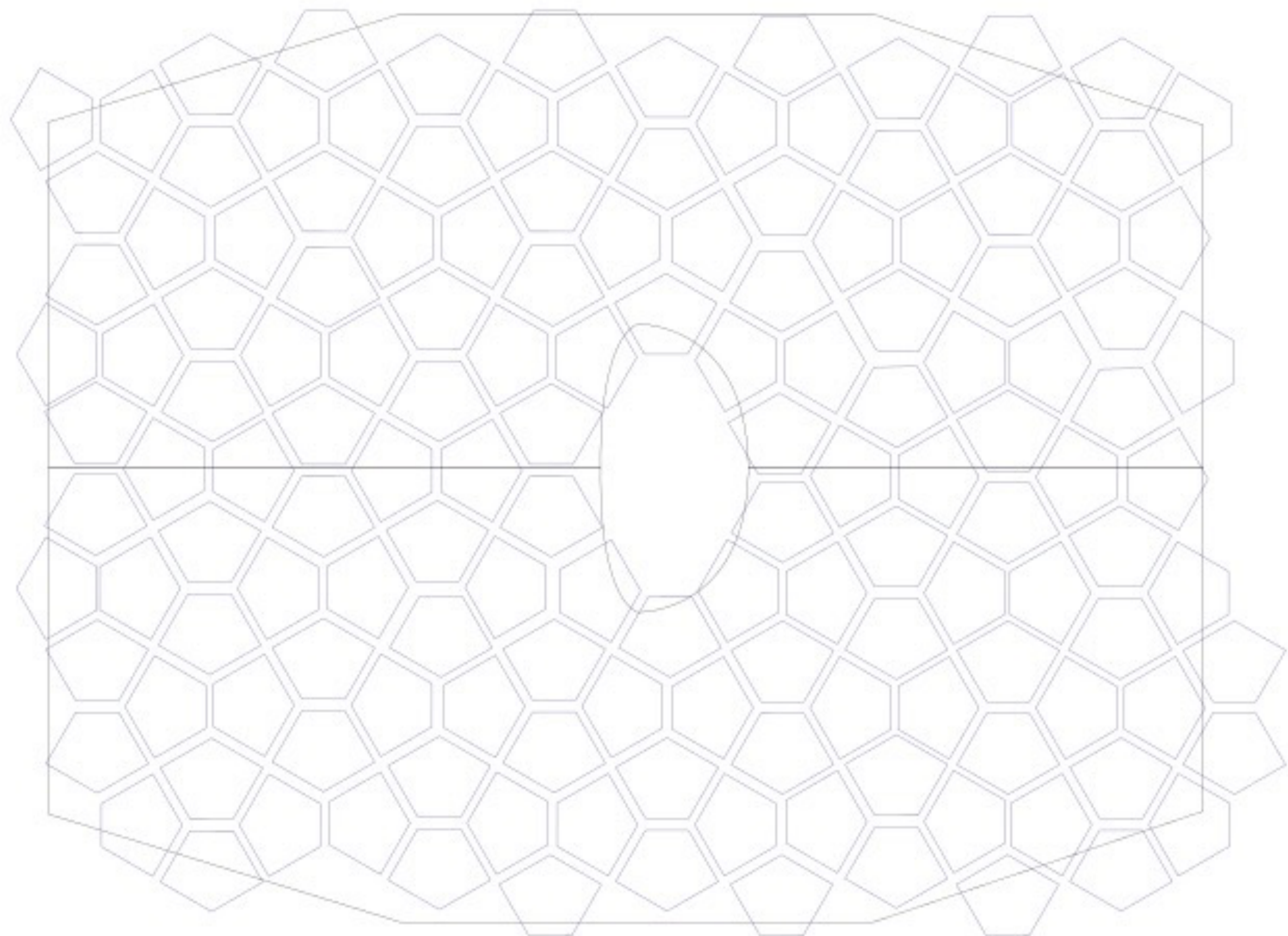


EUNSUK HUR









The Lasercut

Vector Design

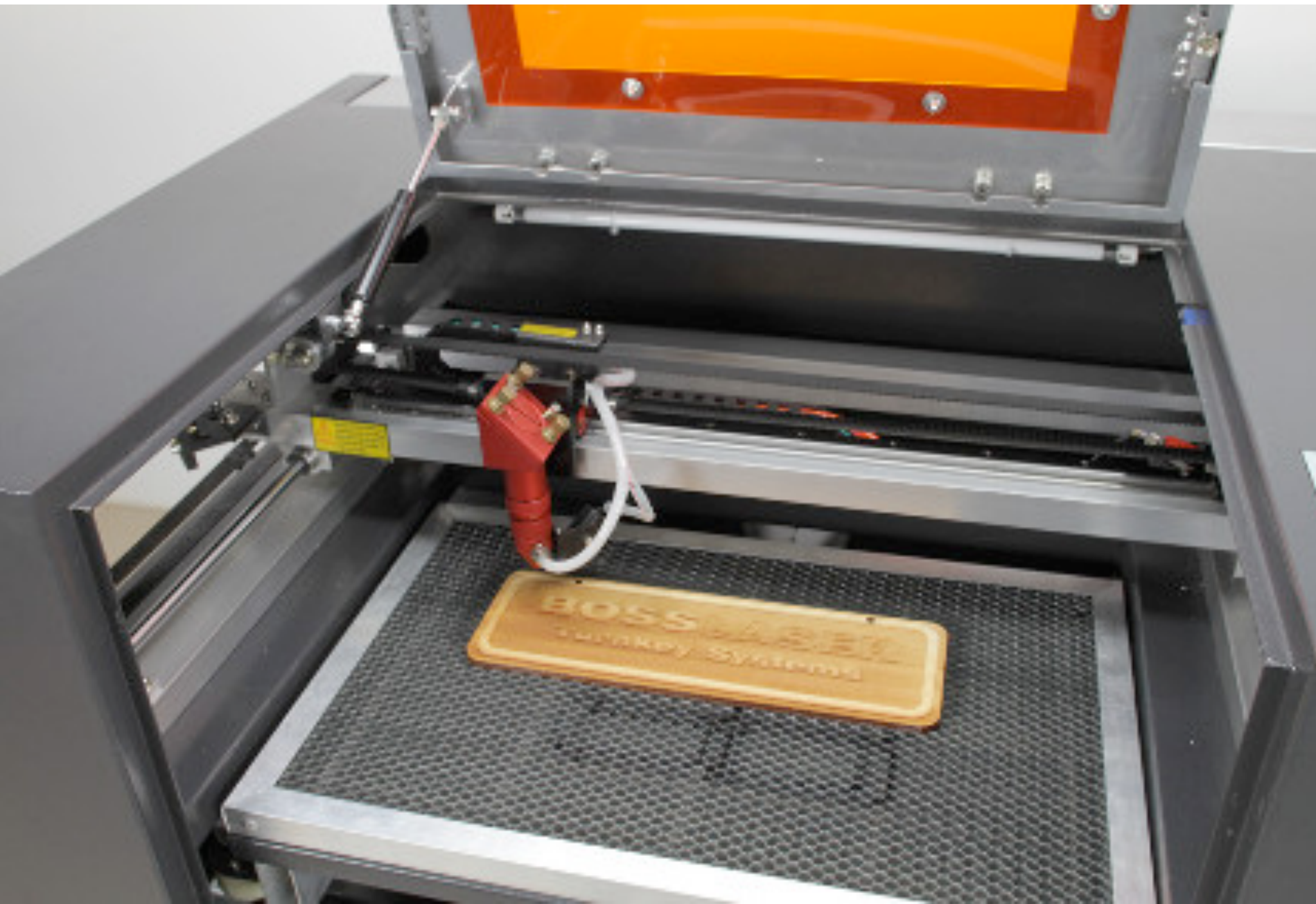
The laser works cutting **flat** materials with a laser beam.

Usually lasercuts in the **DIY** labs are from 40W to 120W to cut paper, textile, wood, plexiglass

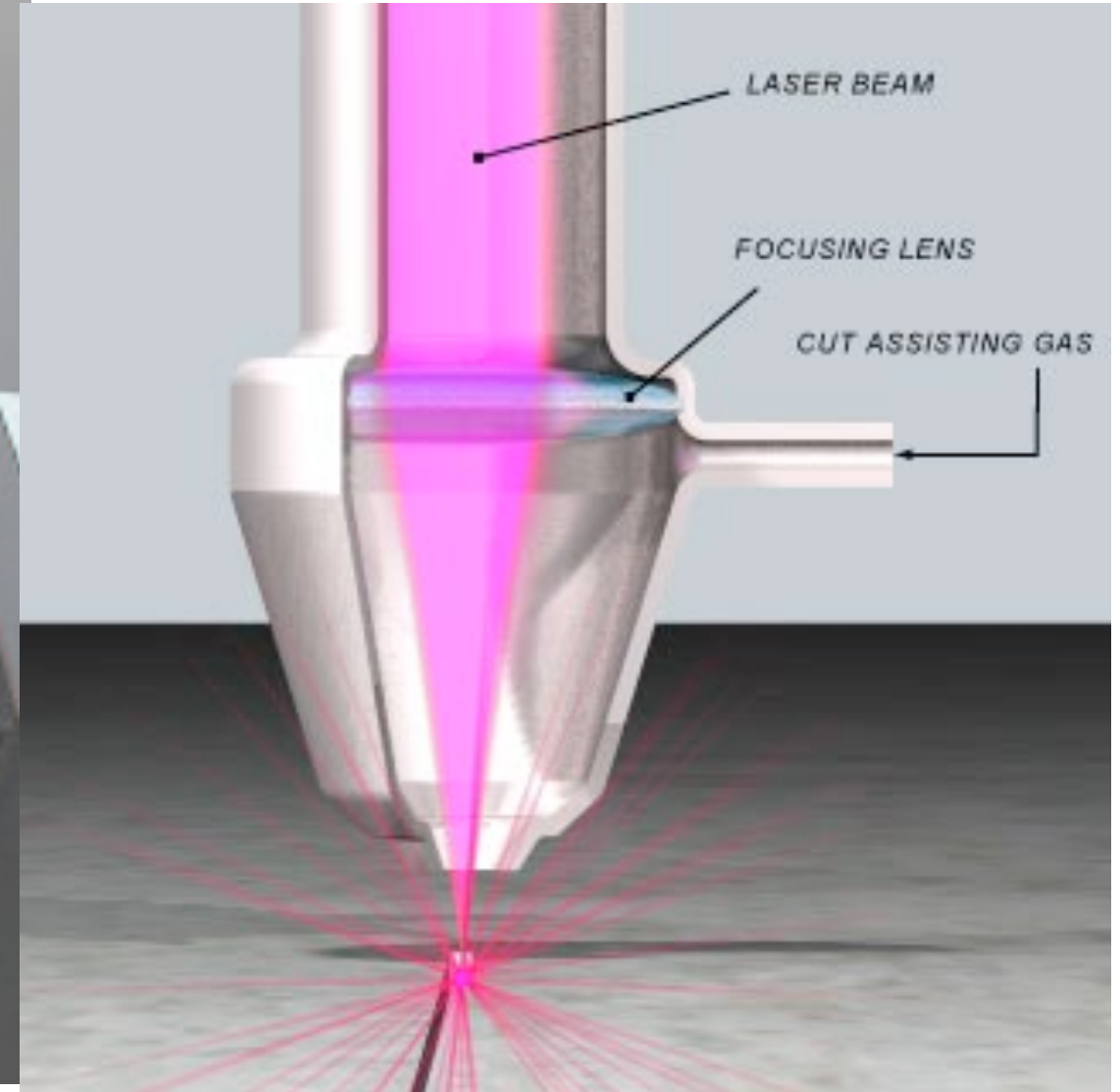
Lasercut is an **entry-level** machine for many fables: easy to learn, simple and rapid to use.

Very go machine to prototype and experiment **on-demand** production

<https://www.youtube.com/watch?v=Wdj4KranBcw>



How does it work?



- Paper and Pencil
- Vector software
- Lasercut

Tools

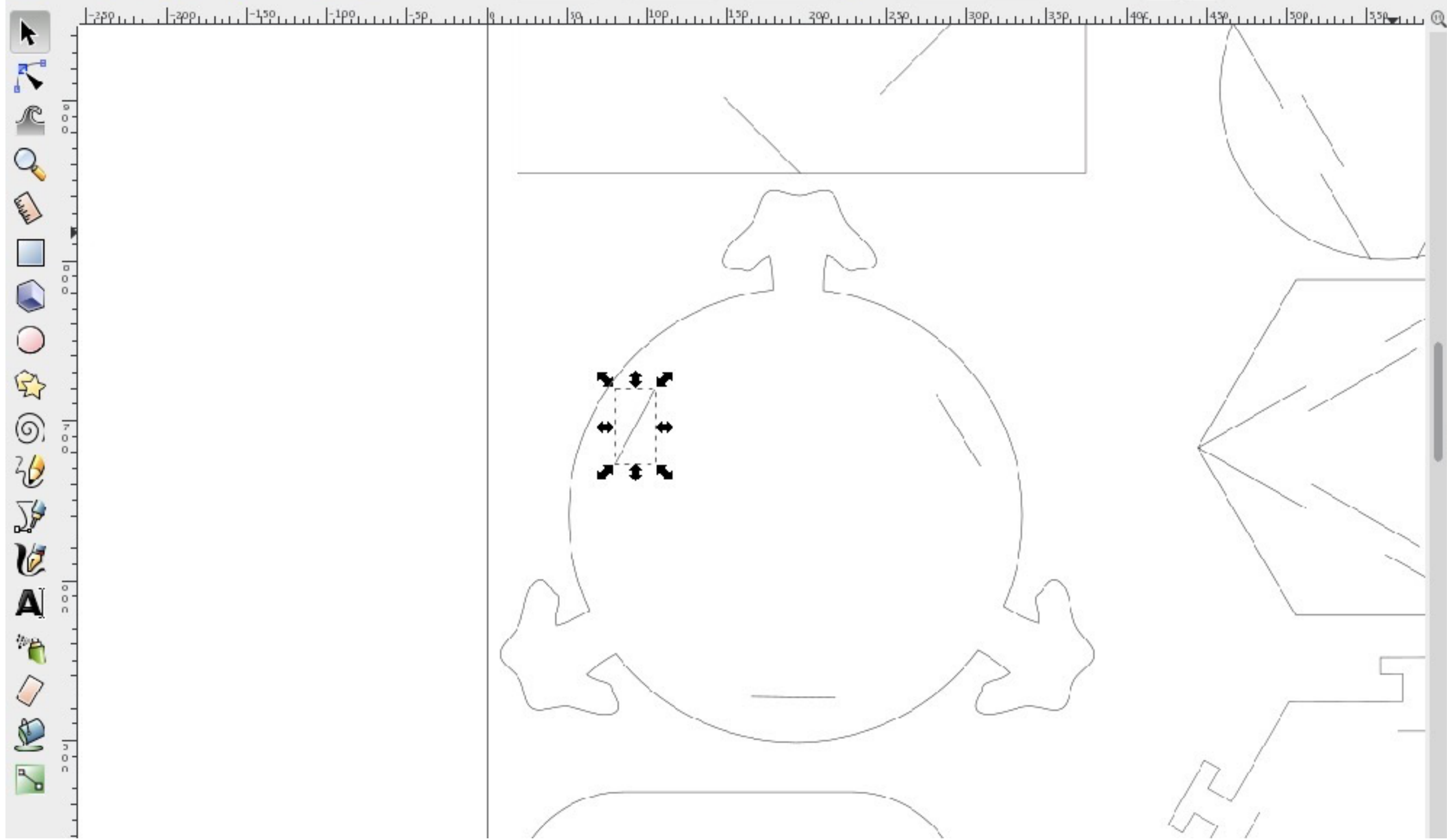
- Breathe, we're not in a rush
- Start from a basic geometry (triangle, square, hexagon...)
- Design interlocking (internal or external)
- Iterate
- Start simple, then go complex
- Explore 3d options

How to proceed

Inkscape - Basic commands



X: 80.176 Y: 672.930 W: 25.500 H: 46.994 px



Fill and Stroke (Shift+Ctrl+F)

Fill Stroke paint Stroke style

Width: 0.300 pt

Join:

Miter limit: 4.19

Cap:

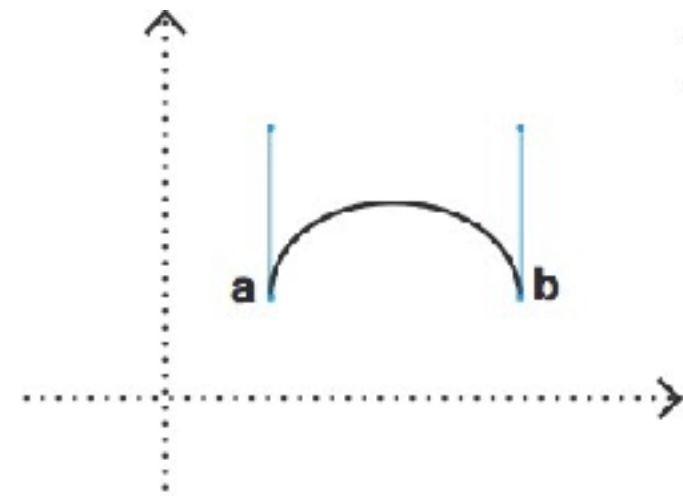
Dashes: 0.00

Markers:

Rur (%)

Opacity (%) 100

Vector Design



Vector image

Lighter than raster, vector images are defined by equations between points. They can be enlarged as you like without altering definition and weight.

.svg (inkscape)

.dxf (autocad)

.ai (adobe illustrator) .eps (ibrido)

.pdf (ibrido)

Raster image (bitmap)

It's a grid of little square, called pixel. The resolution and weight of image depend on the quantity of pixel for every inch (ppi).

.jpeg

.gif

Useful commands

- Global settings (re-size) - RGB
- Document settings (Units, grid) - millimeters
- Tools
 - Select and transform (increase size, rotate)
 - From Object to Path
 - Transform using nodes (Shift+CTRL+M)
 - Filling and stroke (size and color of stroke)
 - Make square, polygons and circles
 - Round corners
 - Boolean operations
 - Group and ungroup

Export Illustrator

Export

Formato: **AutoCAD Interchange File (dxf)**

Use Artboards All Range:

Nuova cartella **Annulla** **Export**

DXF/DWG Options

AutoCAD Version

- R13/LT95
- R14/LT98/LT97
- 2000/LT2000
- 2004/2005/2006

Artwork Scale

Scale: **Millimeters** = Unit(s)

Scale Lineweights

Number of Colors

- 8
- 16
- 256
- True Color

Raster File Format

- PNG
- JPEG

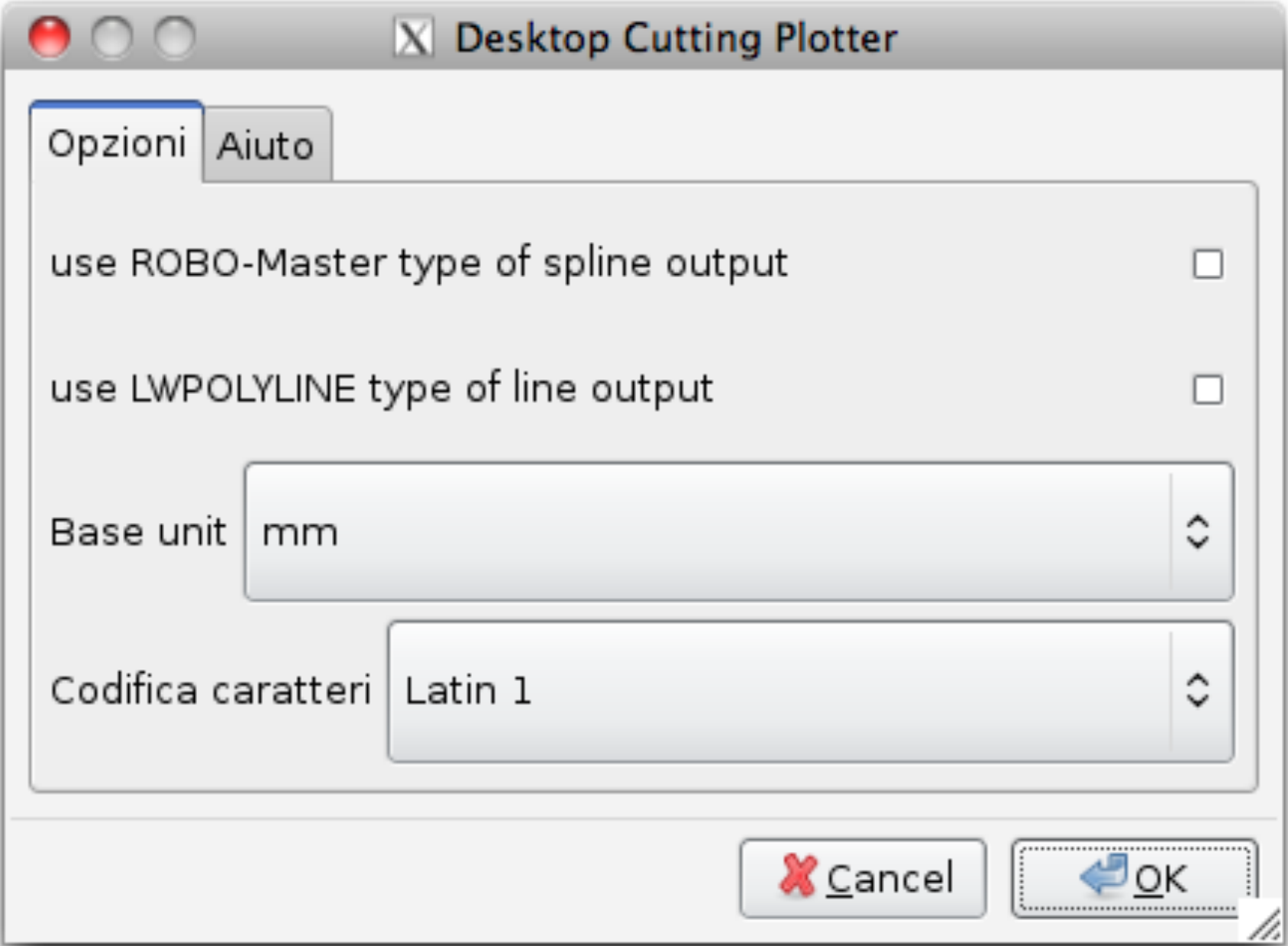
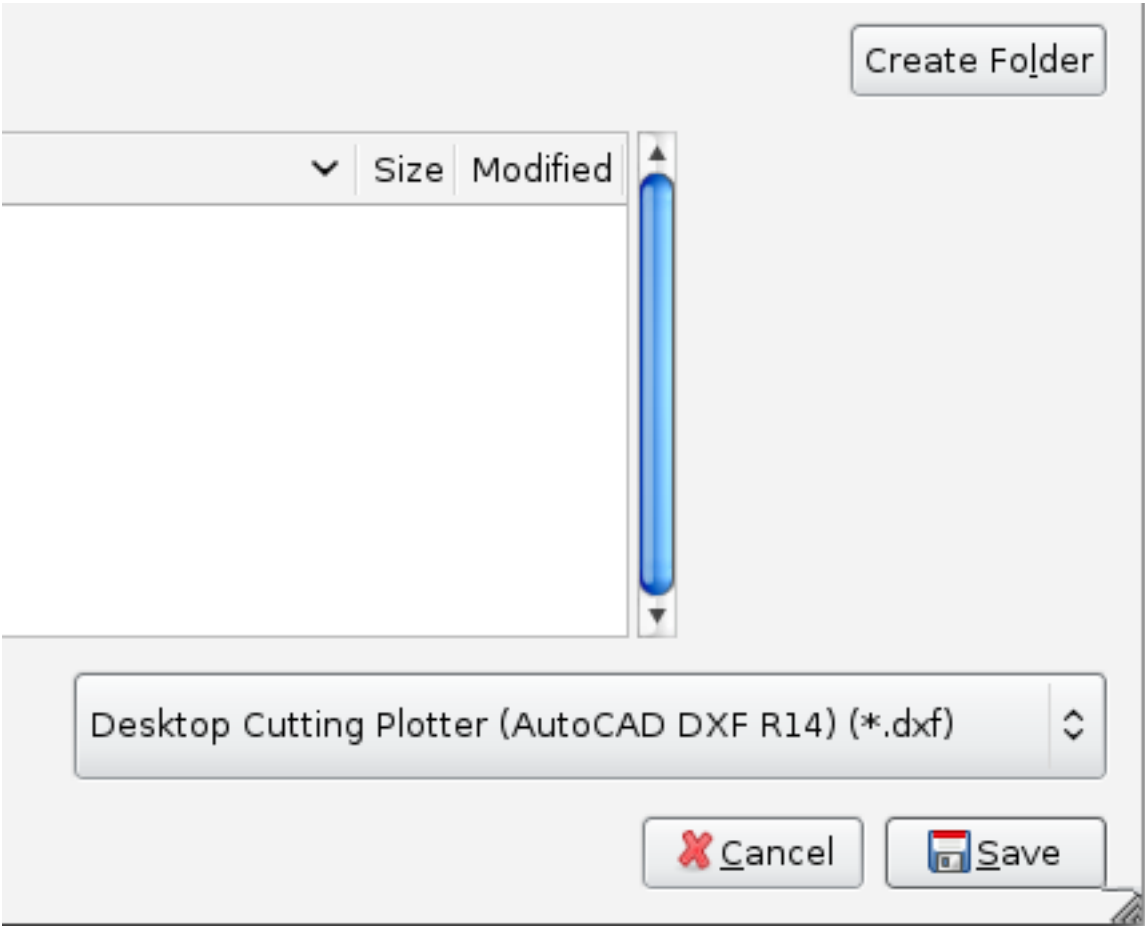
Options

- Preserve Appearance
- Maximum Editability
- Export Selected Art Only
- Alter Paths for Appearance
- Outline Text

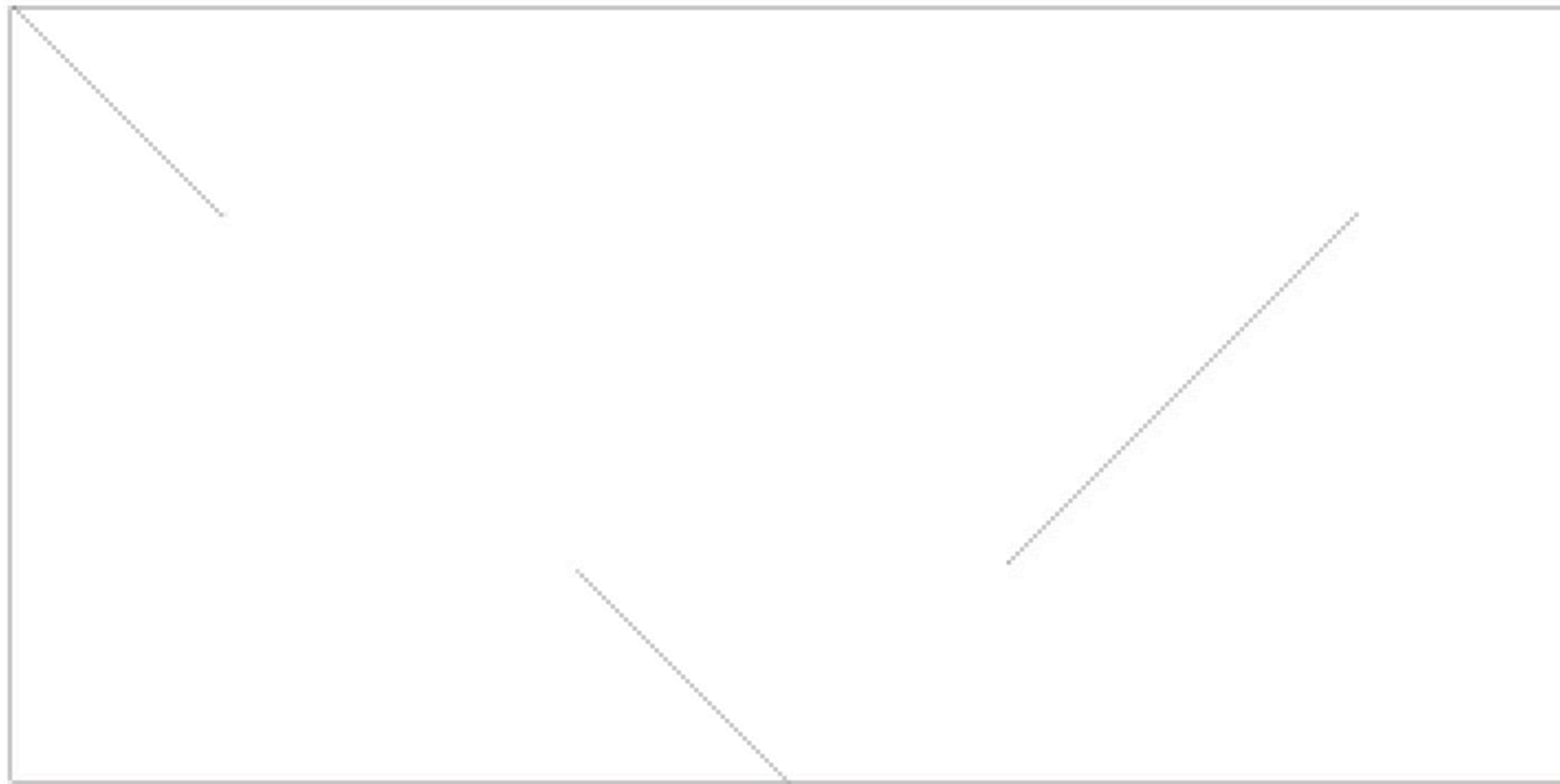
OK **Cancel**

Export Inkscape

Save AS



Examples Files



- <https://drive.google.com/open?id=1BF1rECoL80vonBNVRgupxs851iALunQI>
- <http://oscircularfashion.com/project/-LAUmbh5TcTSSuGLJjmz>
- http://oscircularfashion.com/project/-KxsHEQbWoLHY4_vVVj-
- <http://oscircularfashion.com/project/-L6R94fjVctPy7GKWWhyk>



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THANKS!