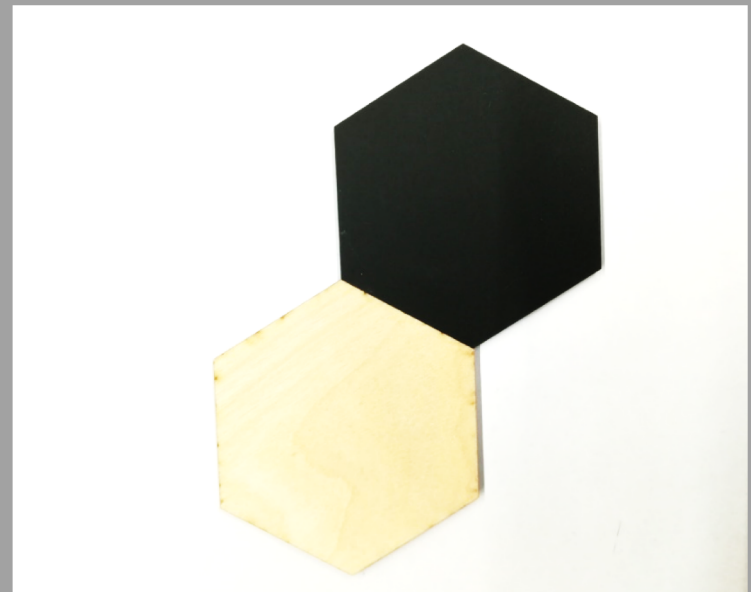


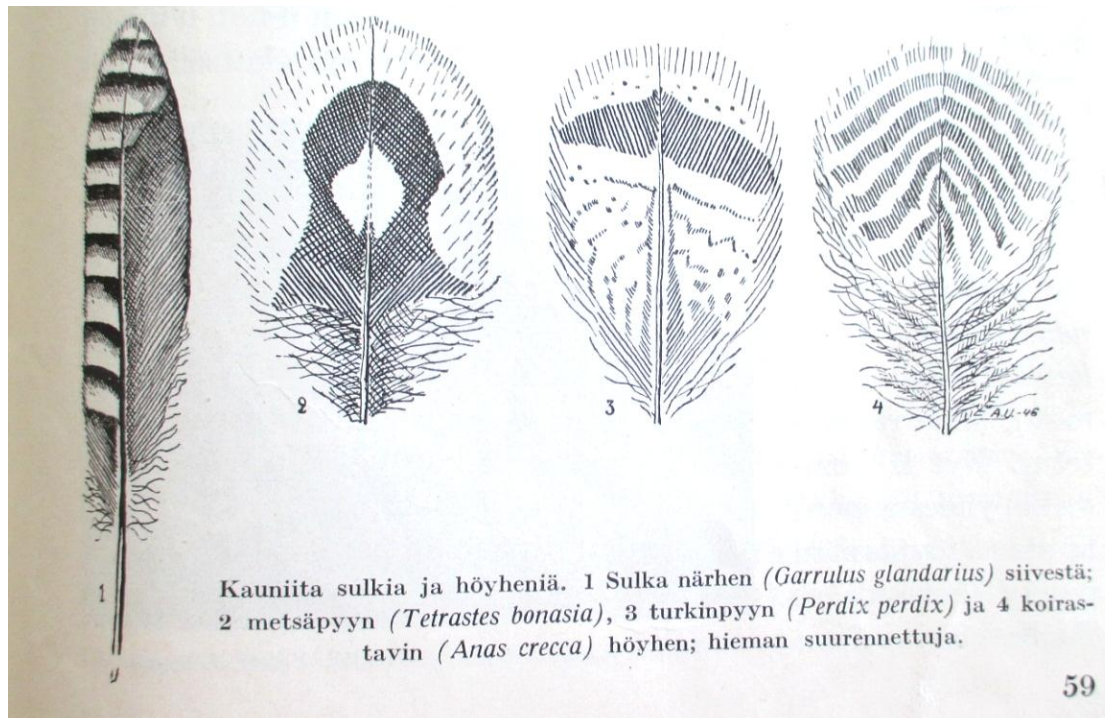
Rhythm
Repetition
Surface



Crystal Flowers in Halls of
Mirrors
Aalto University
Laura
Isoniemi
29.1 2019

Repetition and symmetry in nature

- Trees and branches
- Animals
- Plants



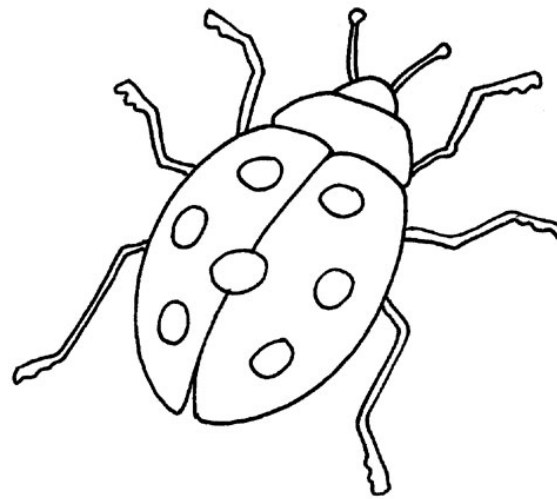
- Symmetry in plants



- Symmetry in trees and branches



- Symmetry in animals



1. Ordering principles in symmetry

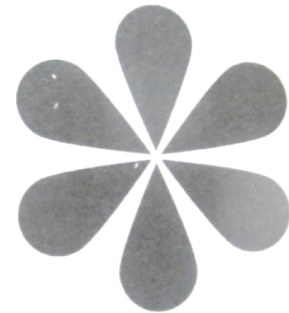
a) Drop
reflected



b) drop



c) reflected, copied and
rotated drop



d) Reflected by one side
reflected



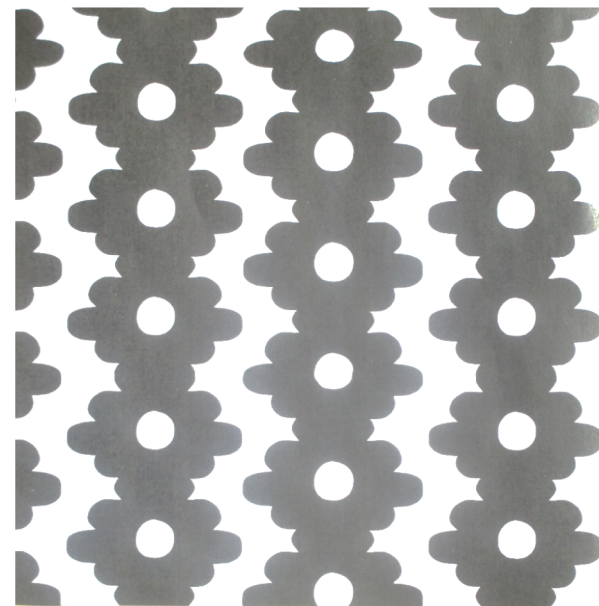
e) group of 4
drops



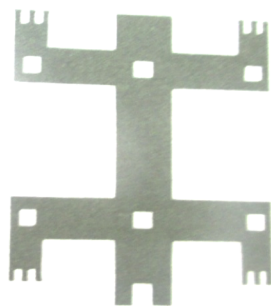
f) 4 groups of 4
reflected drop
groups



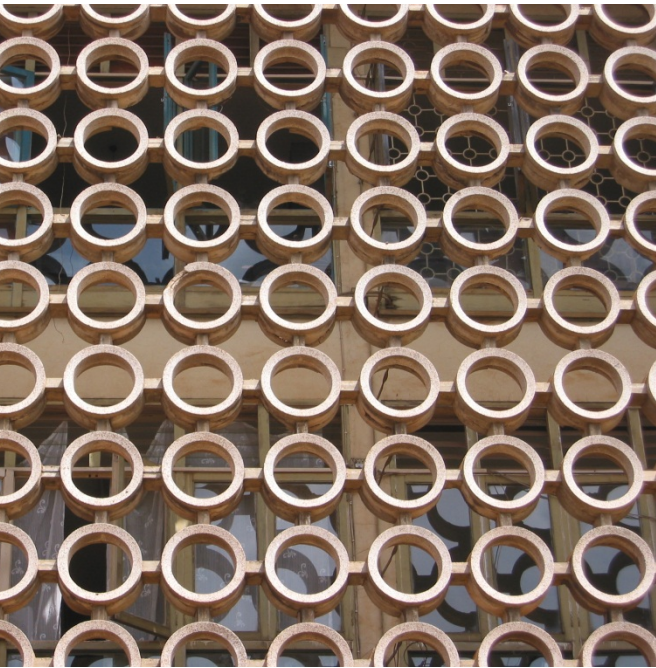
Symmetry in textiles



Reflection about a line



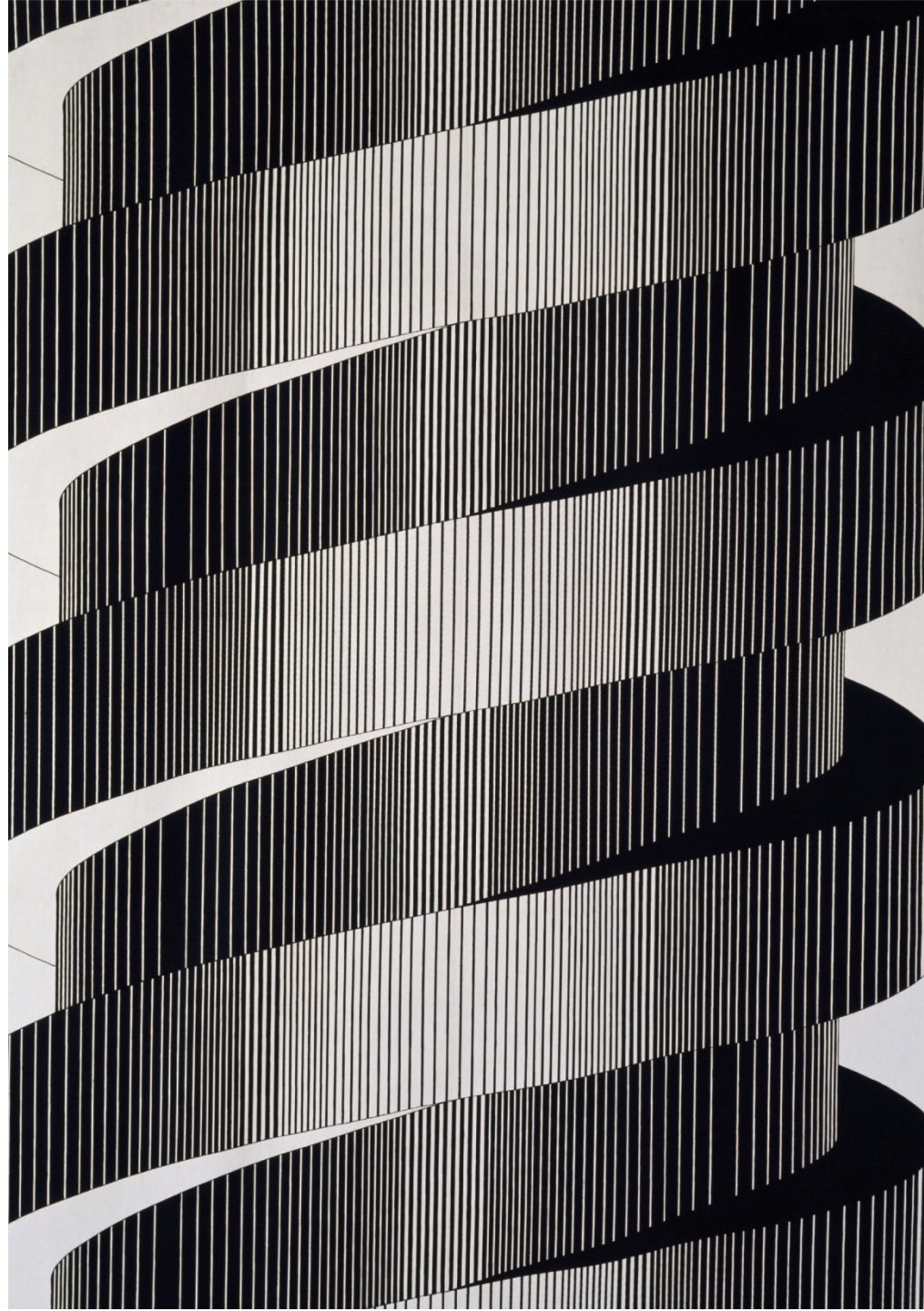
Repetitions in built architecture

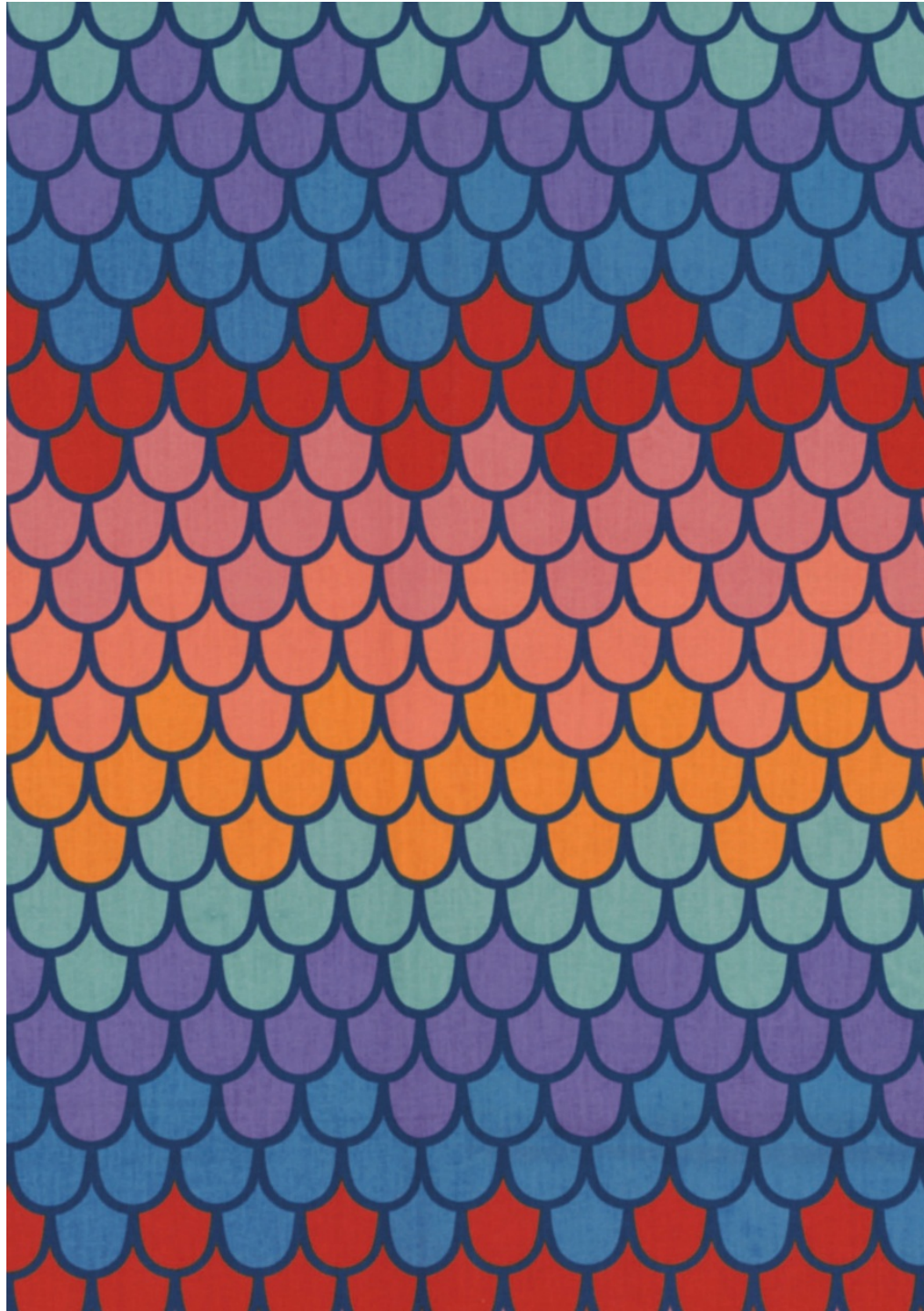




Repetition and symmetry in fabrics.
Time can be seen in the composition of the textiles.
British textiles from the 40', 50' and 60'. Heals.
Victoria and Albert Museum.

Barbara Brown for
Heals ,1969.

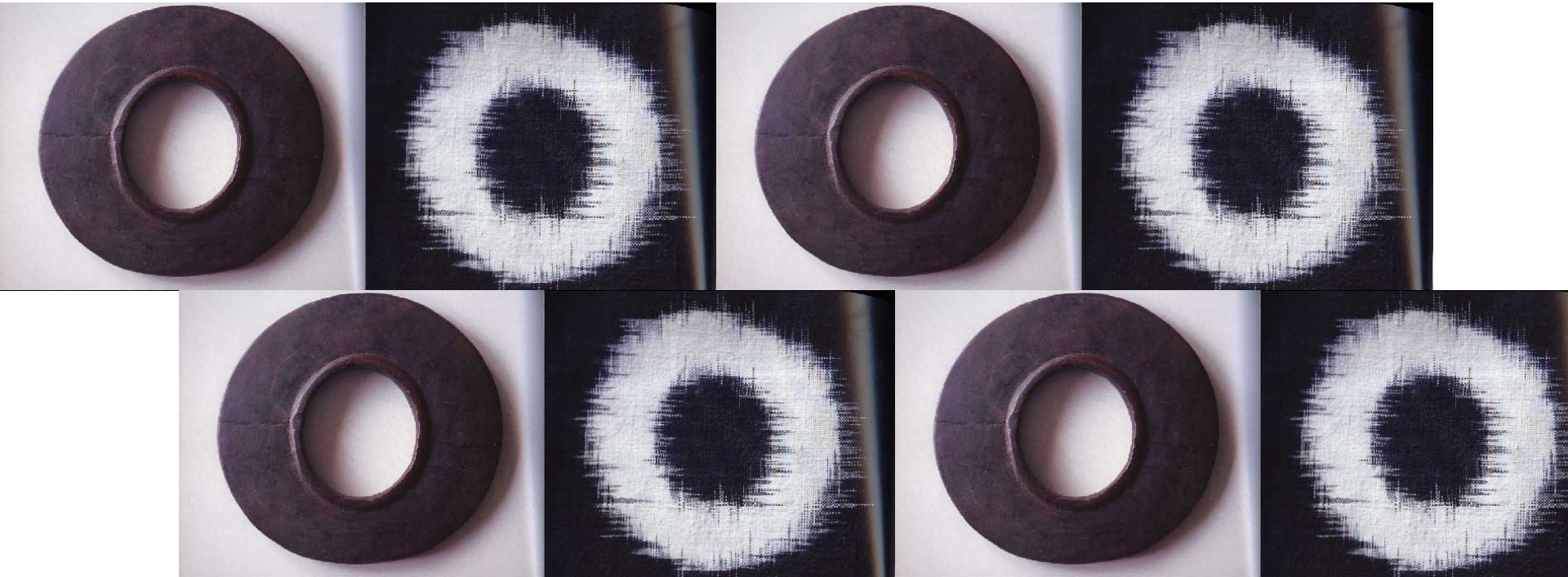


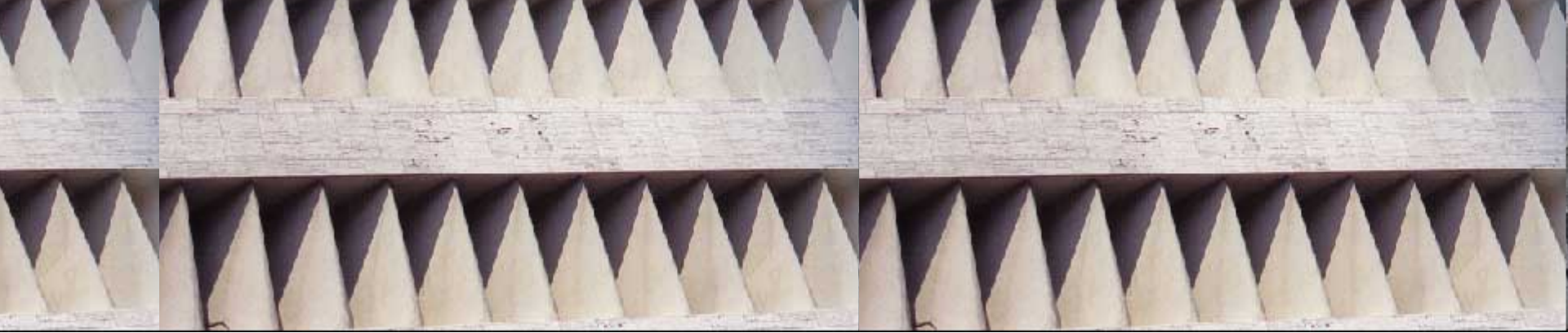


Surface design

- Surfaces that seem to be continuous are created by repeating the module or wanted figure element systematically .
- The surface is consisted together out of the printed elements and the empty space in between the elements. Unprinted and printed areas together create the rhythm to the surface.

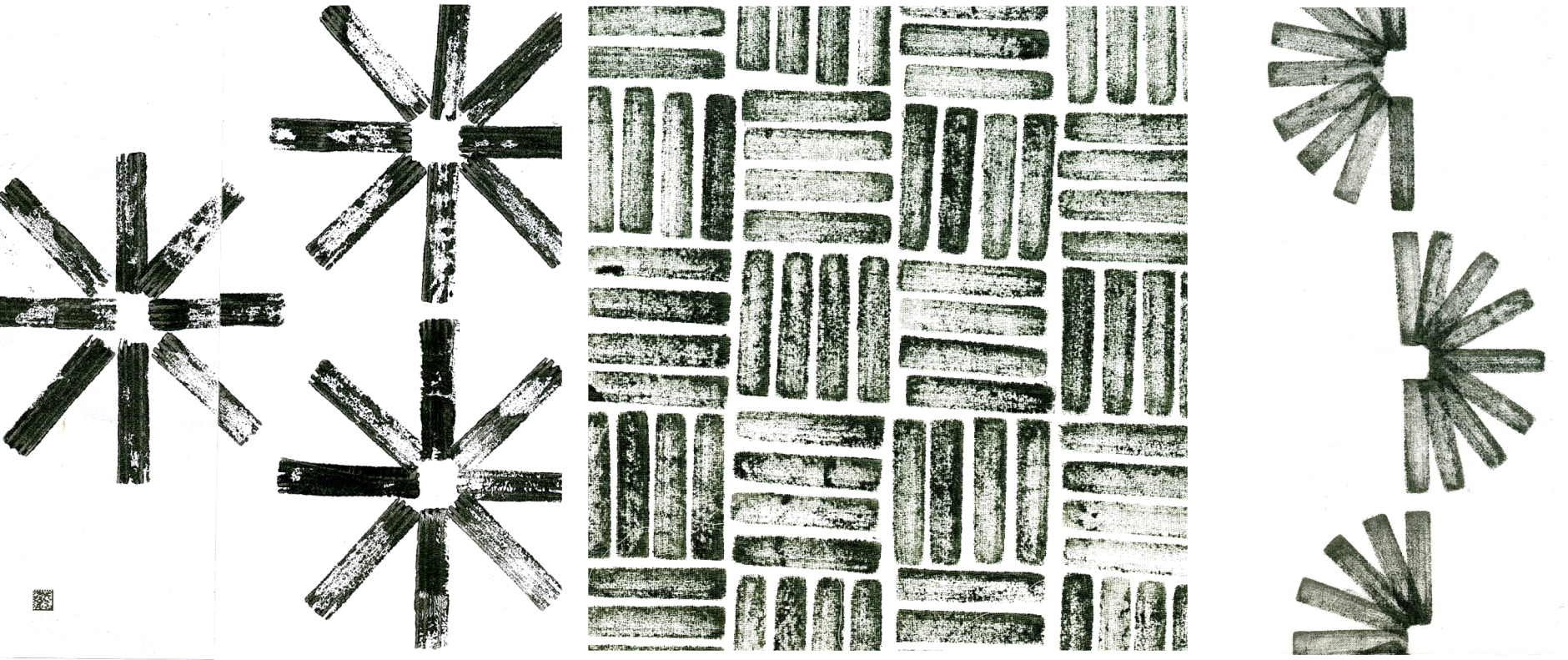
- The rhythm between the figure elements is born from the changes and variations between the unprinted and printed parts.

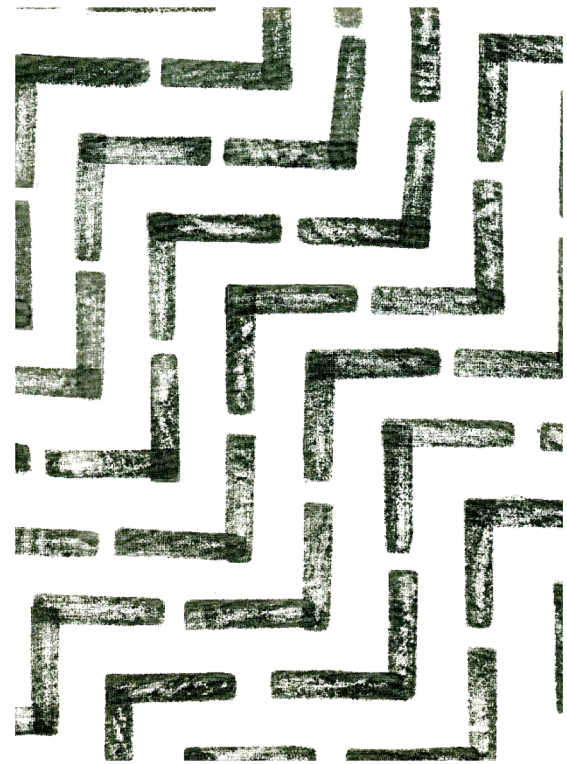
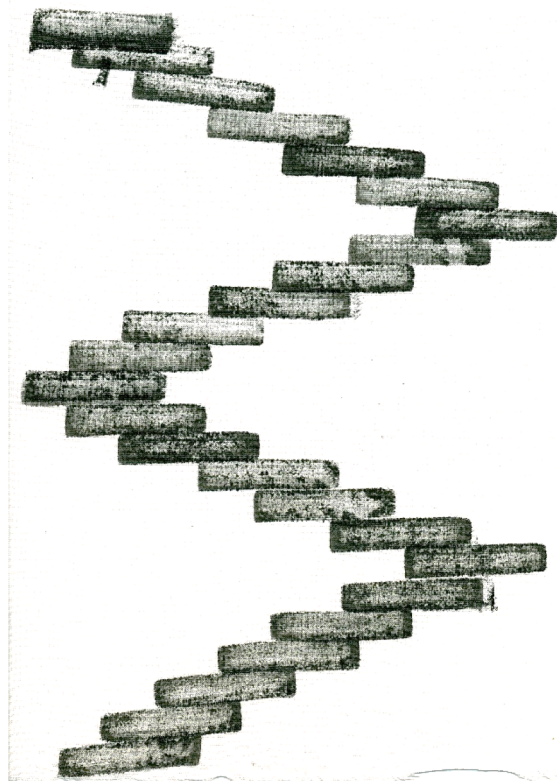
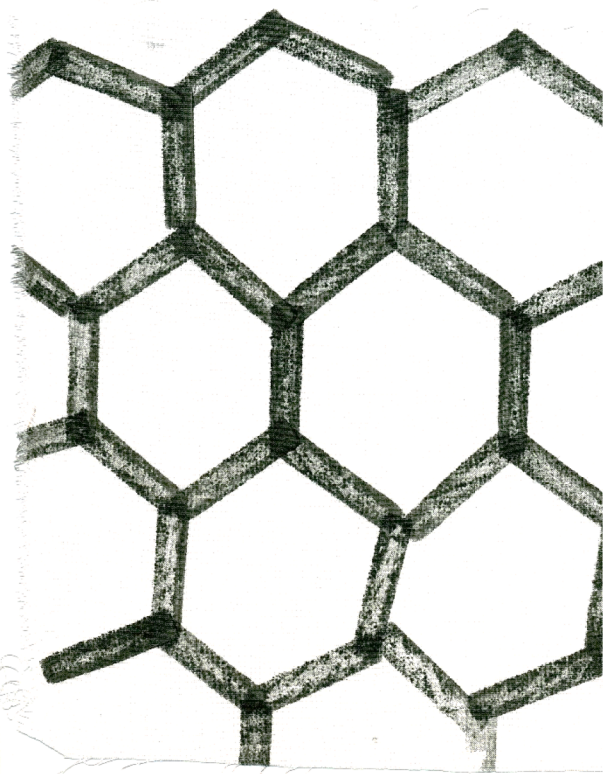


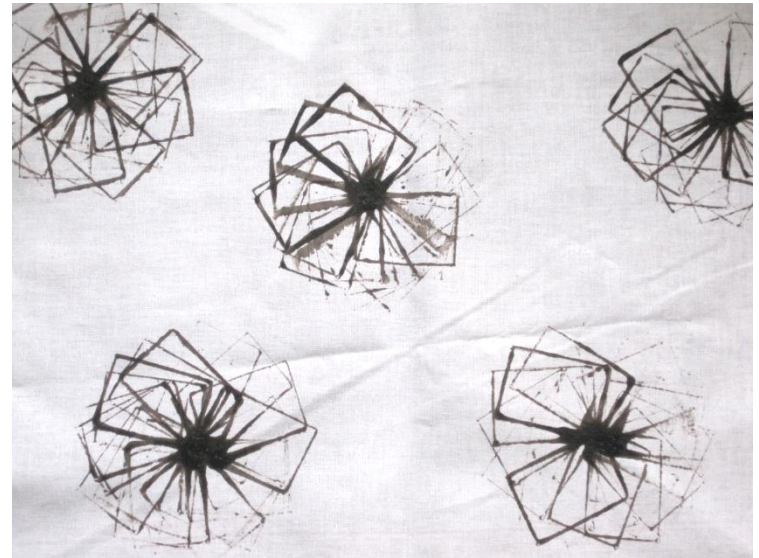
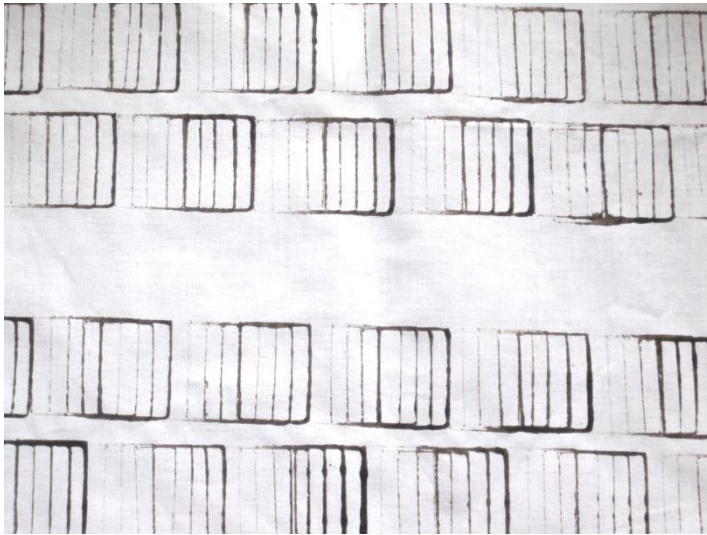
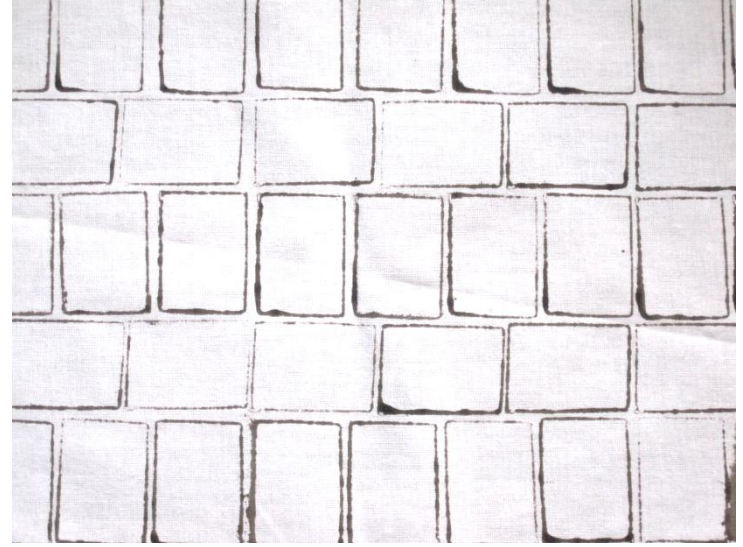
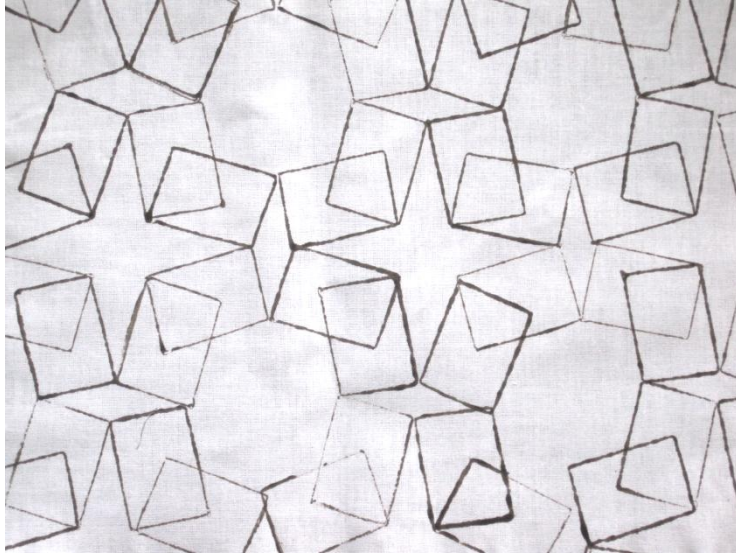


- When building the surface , note:
 - To what **direction** you repeat the figure
 - How **often** you repeat the figure(density)
 - Horizontal, diagonal ?
 - As an ornament
 - Movement in the surface

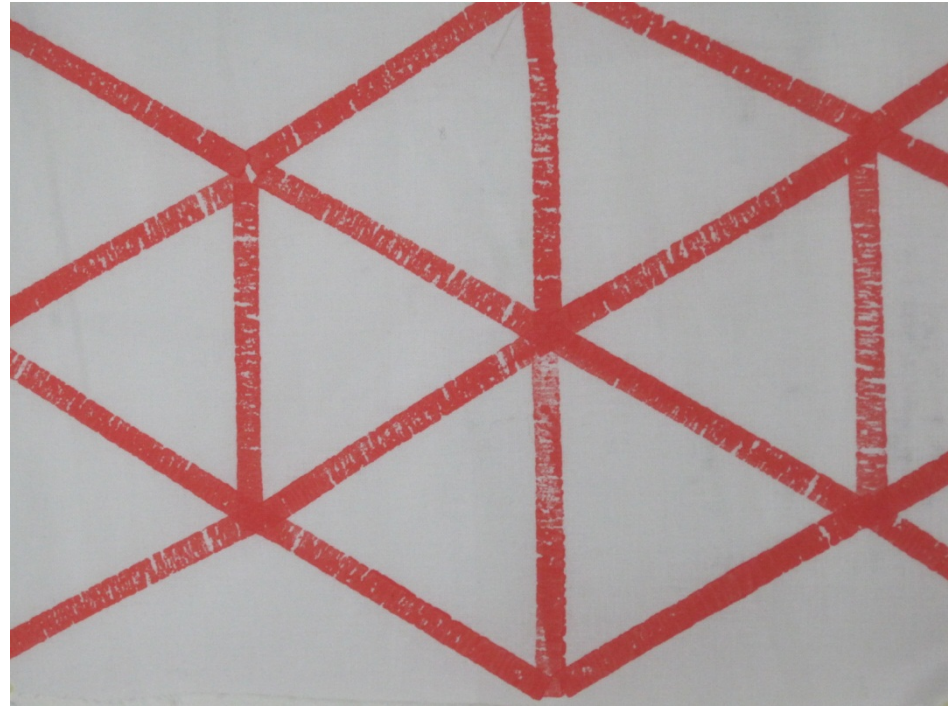
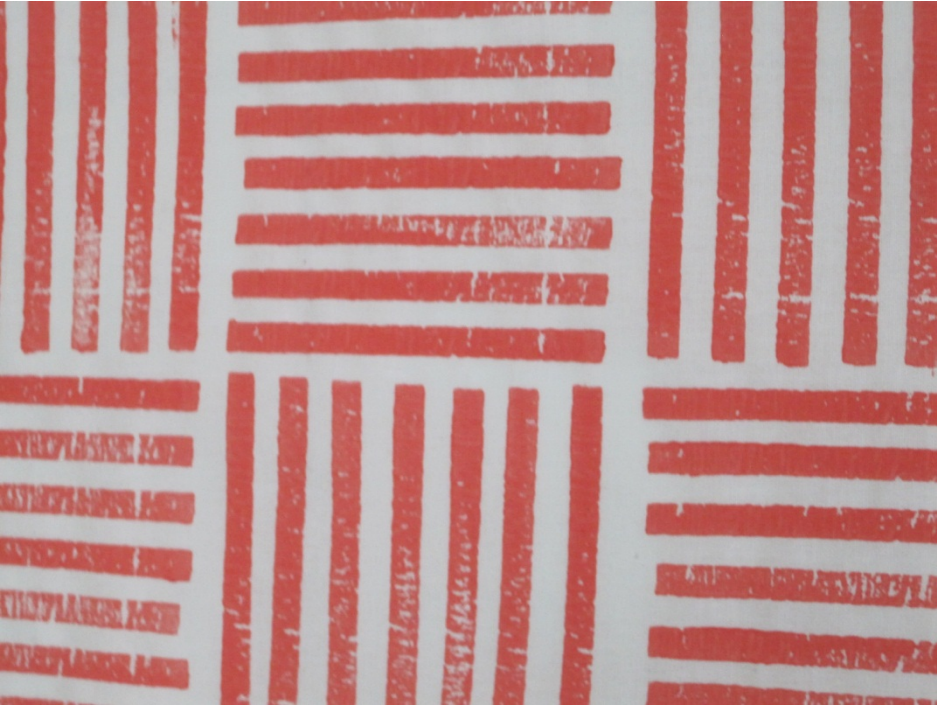
Variations of repeats







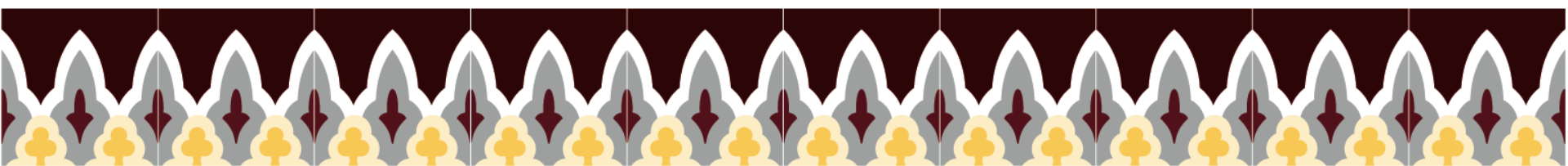
Examples



Ornaments

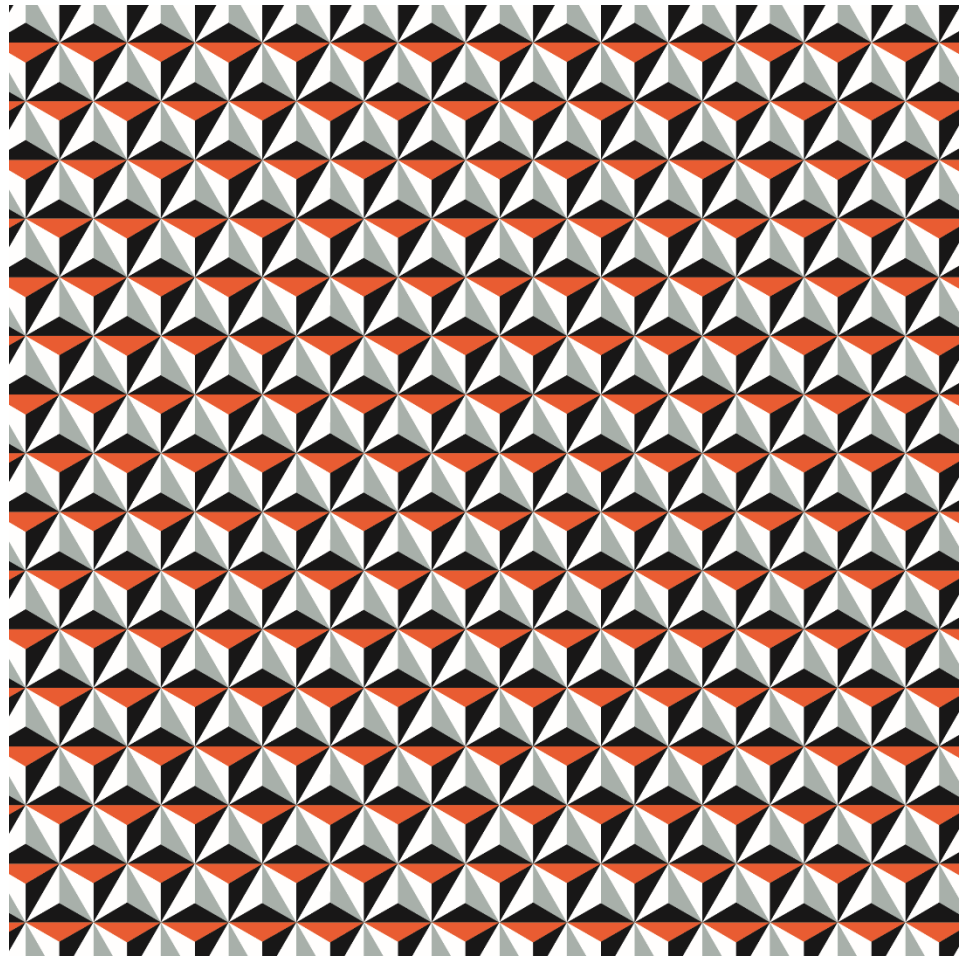
- Ornaments or repetitive decorations are designed by repeating one figure-element systematically in rhythm
- In surface ornament figures repeat in both sideways and upwards. Such ornaments are used in clothing, tapestry, Ribbons, fabrics, plates and tiles. In side ornaments figures repeat sideways.

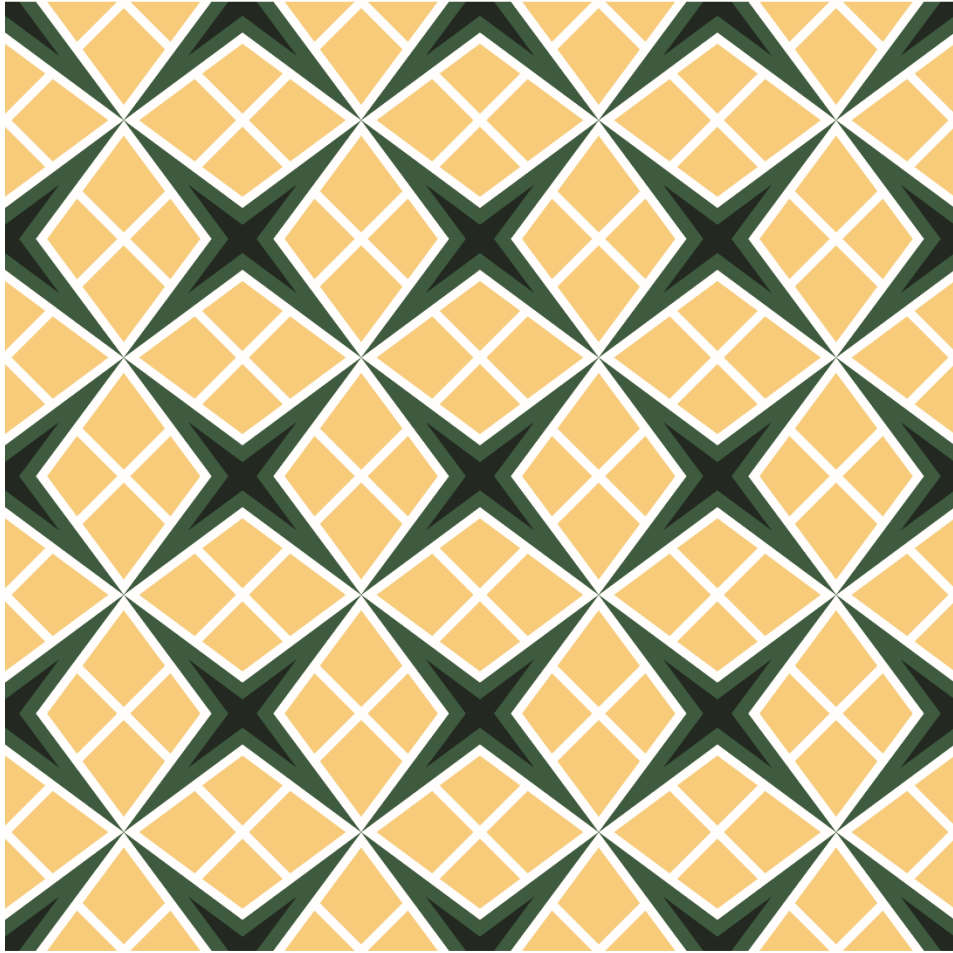


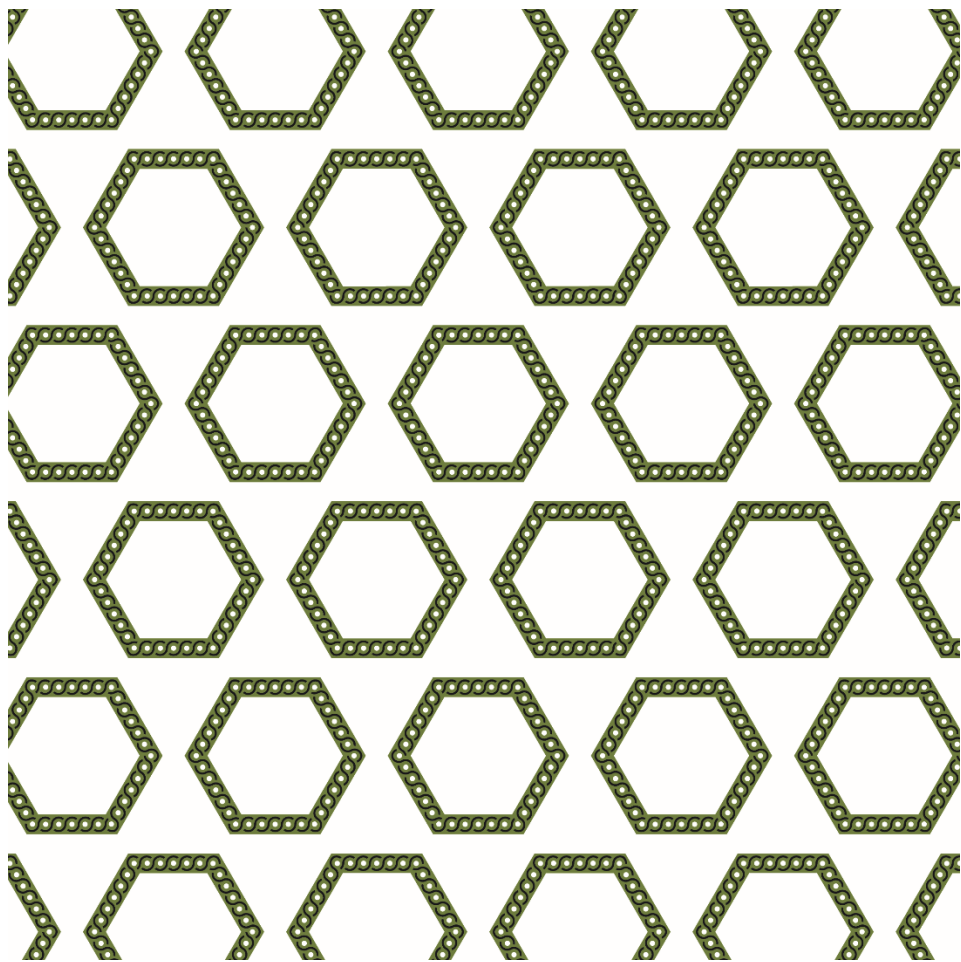


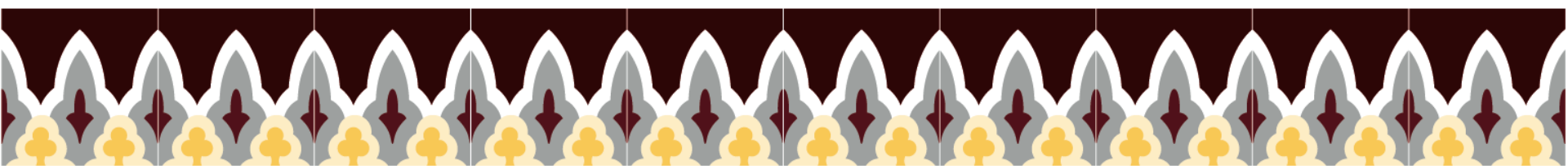
Repetition in tiles

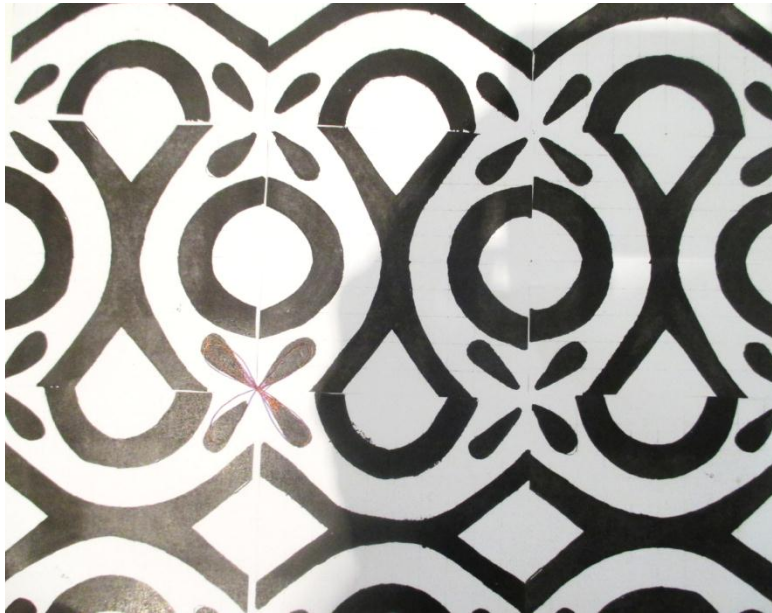


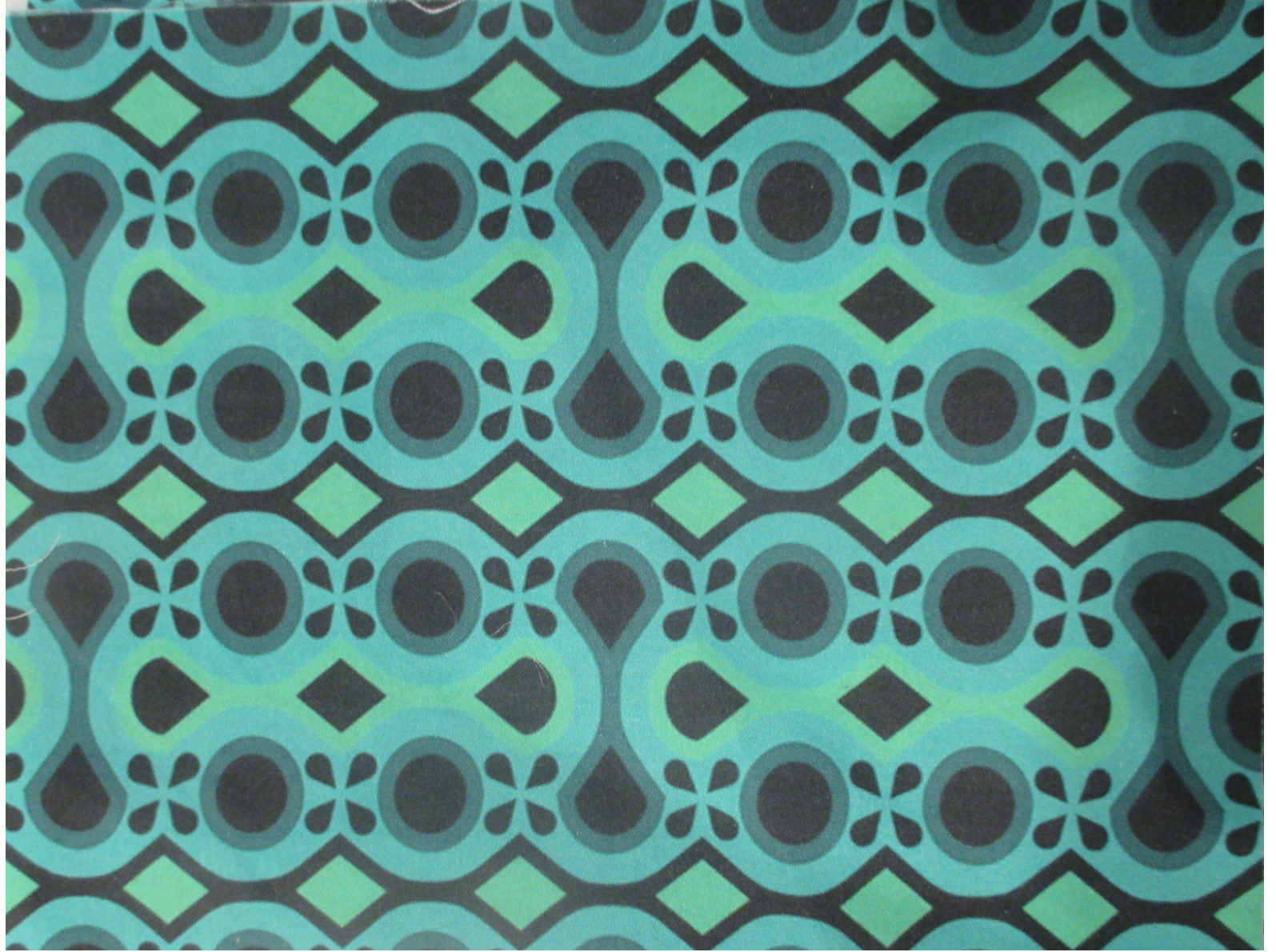


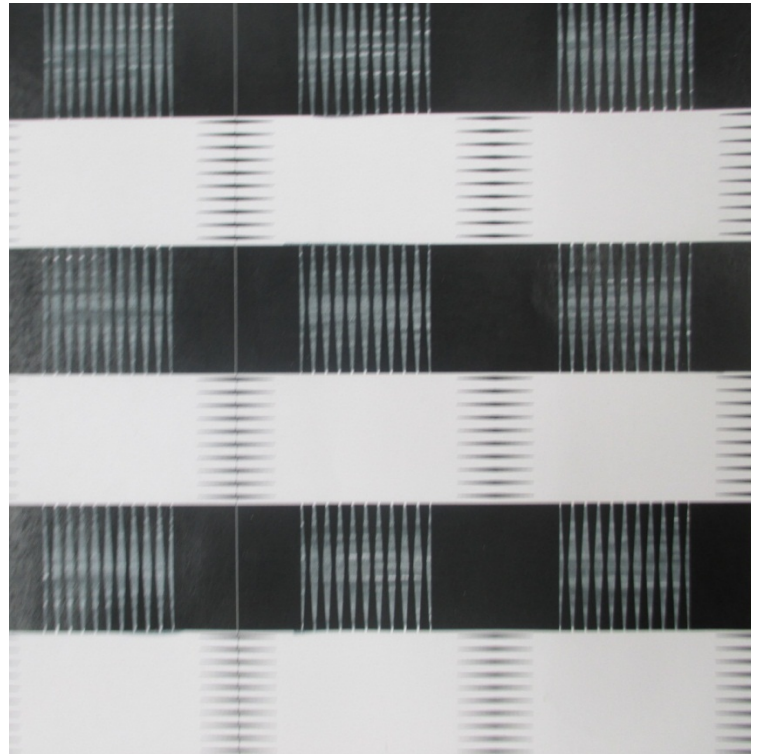
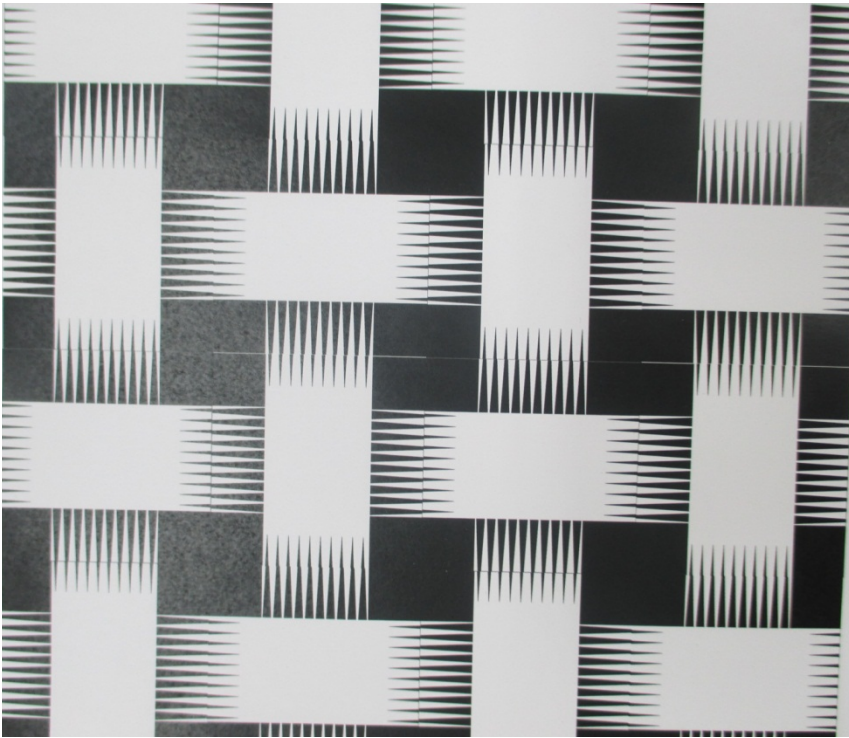
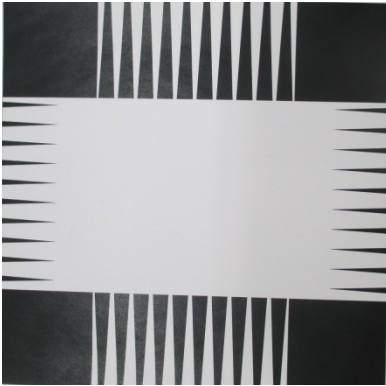


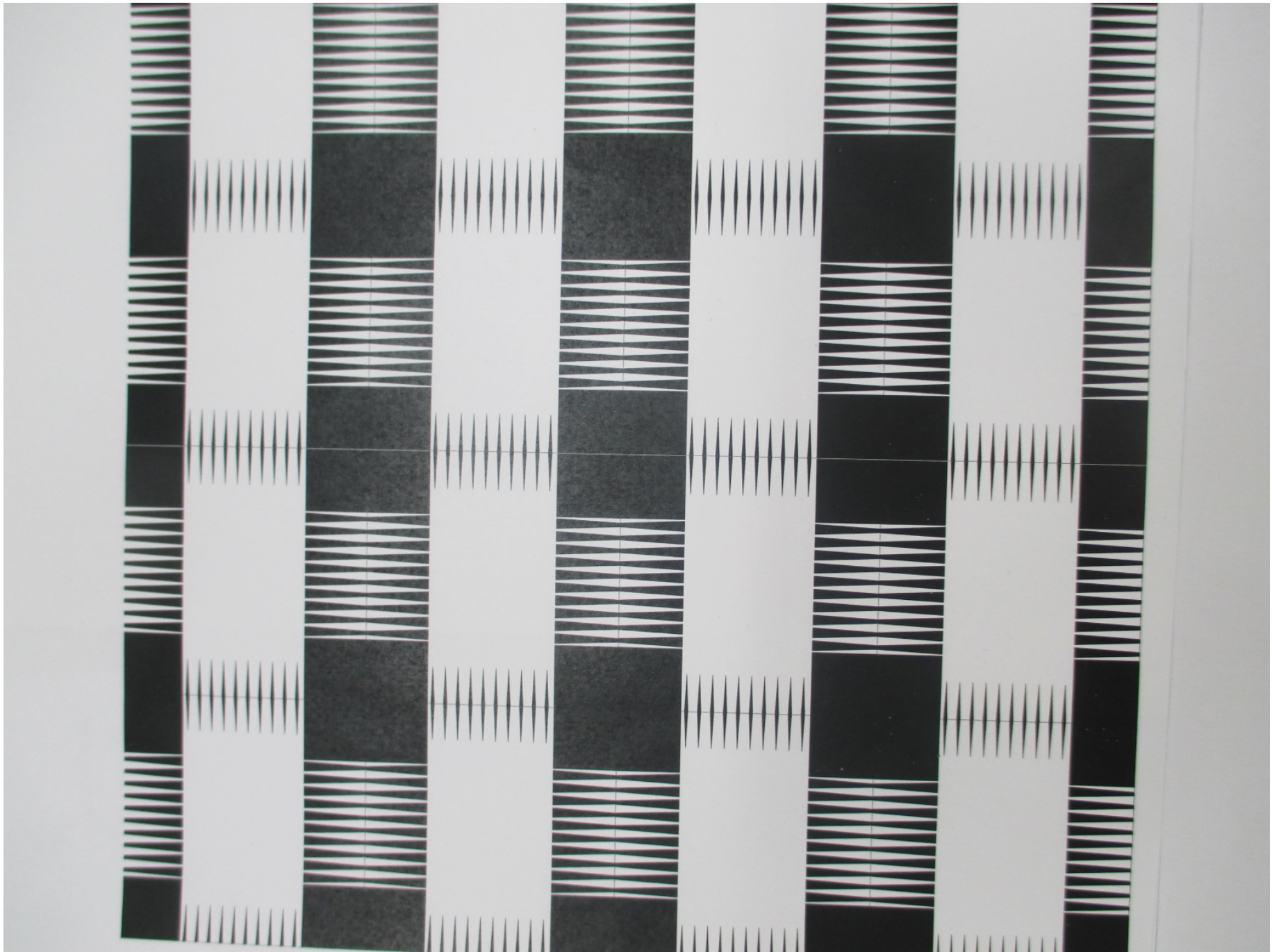






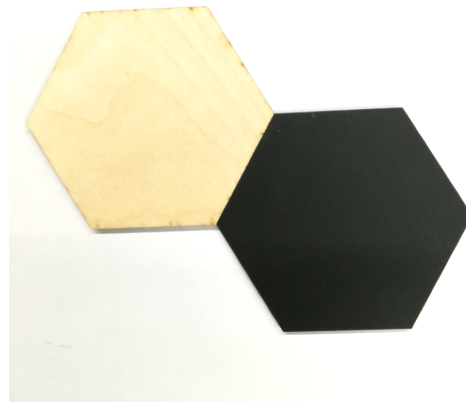






Exercise Tiles 29.1 2019

- Each group get own box of tiles
- Each group creates at least **3 as different surface** versions with the given tiles as possible
- The content of the boxes are different and also benefit both mathematical issues and aesthetic elements in design
- Work as a team and use all group members skills
- Prepare to present 3 versions by pictures by 7.2 to my courses by group name. Feedback 12.2



Target of the task:

- Create yourself the systems in surface design.
- To understand the mathematical actions by making them and making visible the beauty of it at the same time.
- To make visible the tiling systems and the different possibilities of repetiting
- Use symmetry and also visual elements in creating surfaces