Bridges Math Art Galleries

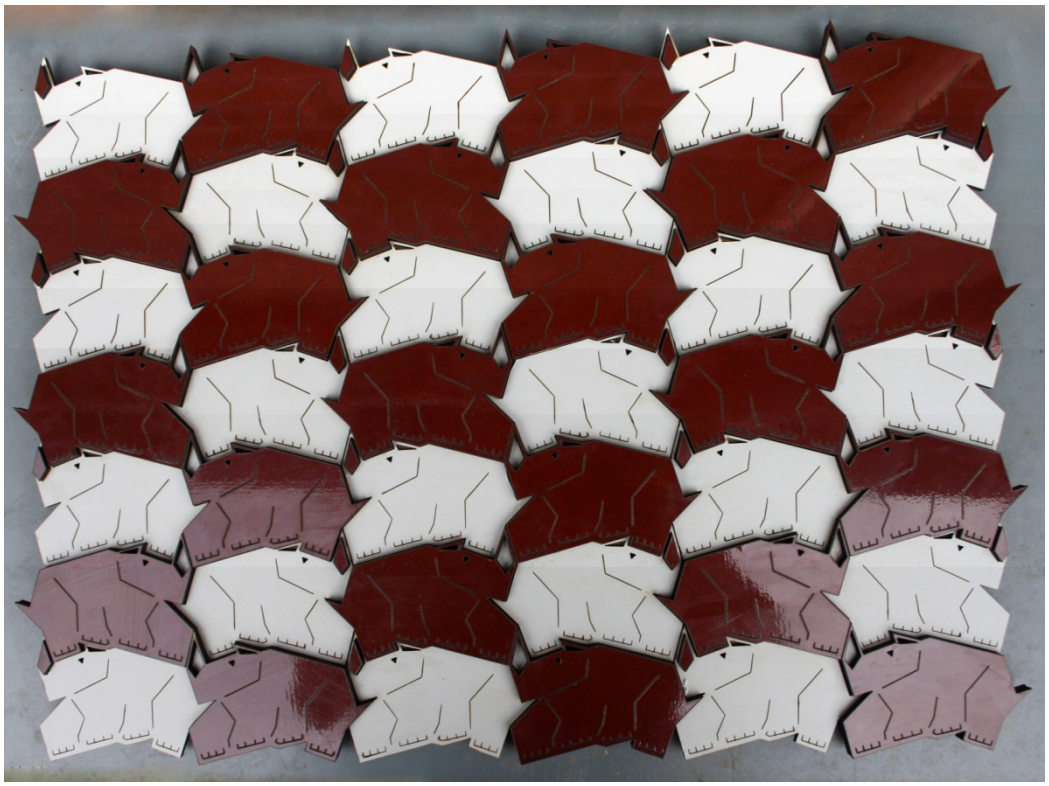
Jun Hu, Loe Feijs , Feng Wang (teachers), Ardjoen Mangre, Matthijs Willems, Hanna Zoon (students).

Professors + students of Industrial Design, Industrial Design Department, Technical University of Eindhoven, Eindhoven, The Netherlands (mailto: j.hu@tue.nl)

The art works proposed are examples of results of a yearly workshop for industrial design students at TU/e. The workshop serves to teach mathematical principles to design students. The students defined tessellations in turtle graphics using the new Oogway library for Processing and the classical tessellation theory of Heesch and Kienzle. Oogway is a happy marriage of turtle graphics and splines. But we do not stop at a digital representation of their tessellation design, we continue to cut their tessellations in perspex, wood, felt, adhesive plastic, felt and so on (using vector graphics output from Oogway). It moves the abstract concepts of math into the real world, so that the students can experience them directly, which provides a tremendous reward to the students. The pedagogics of the approach has already been described by Bartneck and Feijs in 2009.

Before designing their own tessellations, the students got lessons on group theory, golden ratio and splines, next to inspirational lectures about Escher, fractals and Chinese symbiosis art. Twelve students completed the class and we selected three of the most interesting works for the exhibition each based on a different Heesch type and all three realized using MDF and the Speedy 300 laser cutter of TU/e d.search-labs. The Heesch types are CG1CG2G1G2 , TGTG, CCC (Willems, Mangre, Zoon, respectively). In our opinion the works are visually interesting and the material qualities add to the overall aesthetics.

Ancient dragon fish by Matthijs Willems
70 x 40 x 0.8 cm
Laser cut wood



Rhinoceroses by Ardjoen Mangre
52 x 37 x 1cm
Laser cut wood

Bird Rosettas by Hanna Zoon
35 x 35 x 1cm
Laser cut wood