Creating dynamic geometry constructions as composition tools in art and photography

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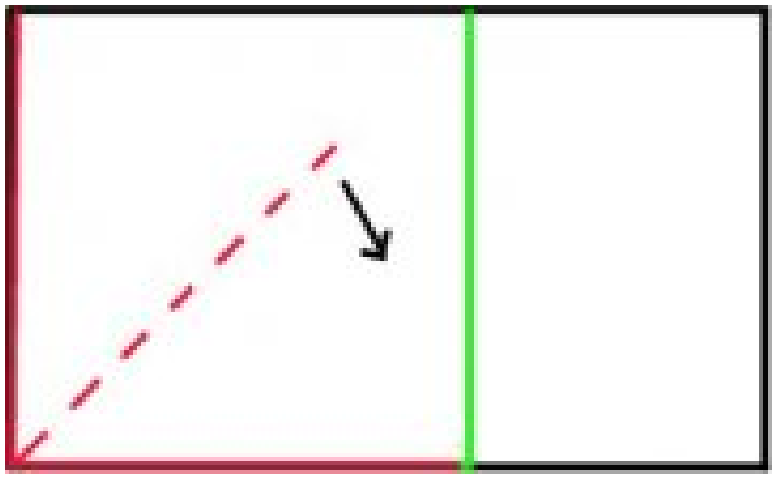
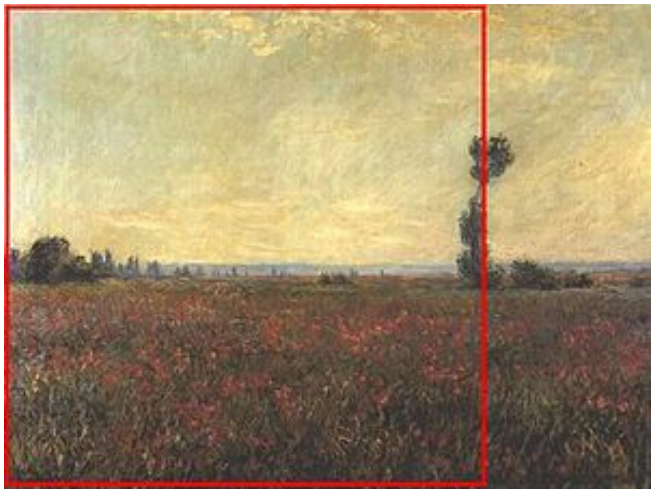
Seeing is not as simple as it looks

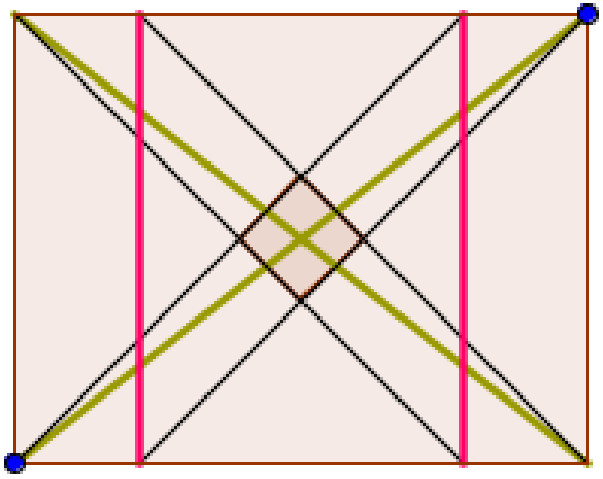
The idea behind this chapter is:

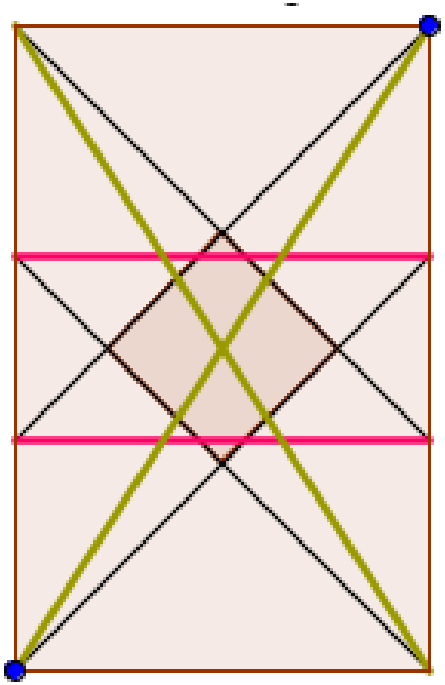
- **to motivate better the study of geometry for students with interests in art by revealing for them the strong relation between the esthetics of an artistic compositions and some geometric principles;**
- **To consider several methods for studying and creating compositions in art**
- **To create dynamic consturctions (in GeoGebra) for implementing these methods**

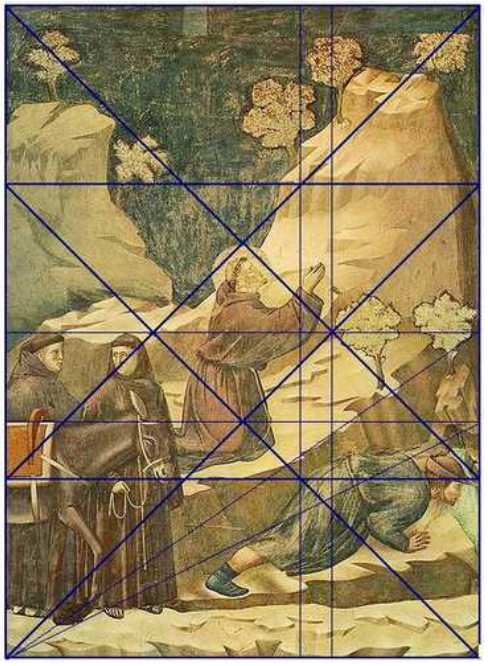
Rabatment





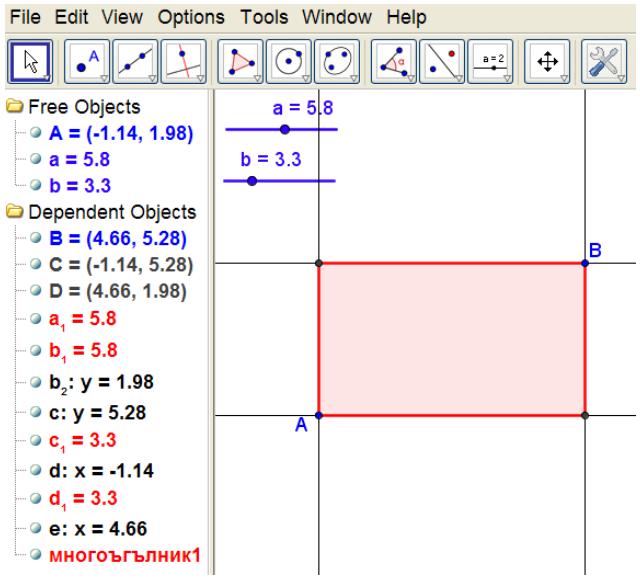


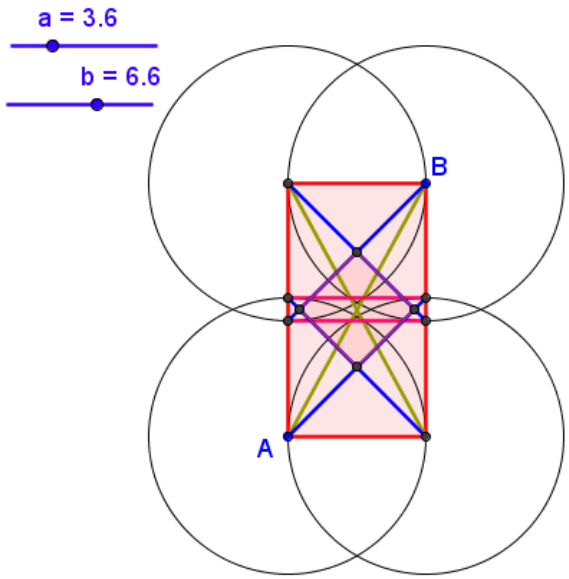


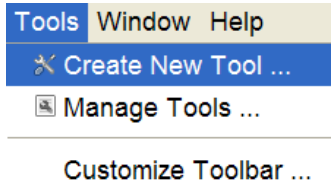


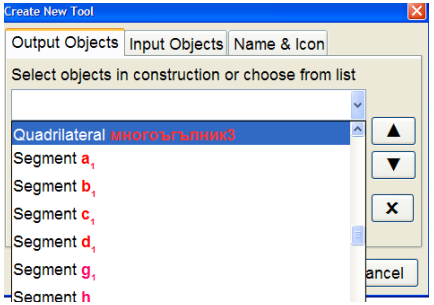
Creating a Rabatment button (in GeoGebra)

Step-by-step description of the process

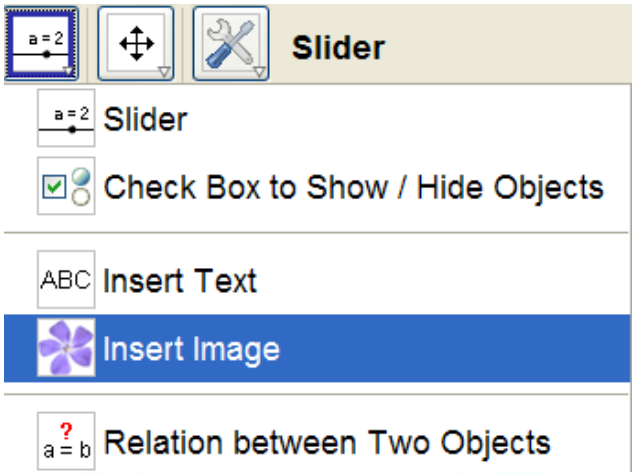


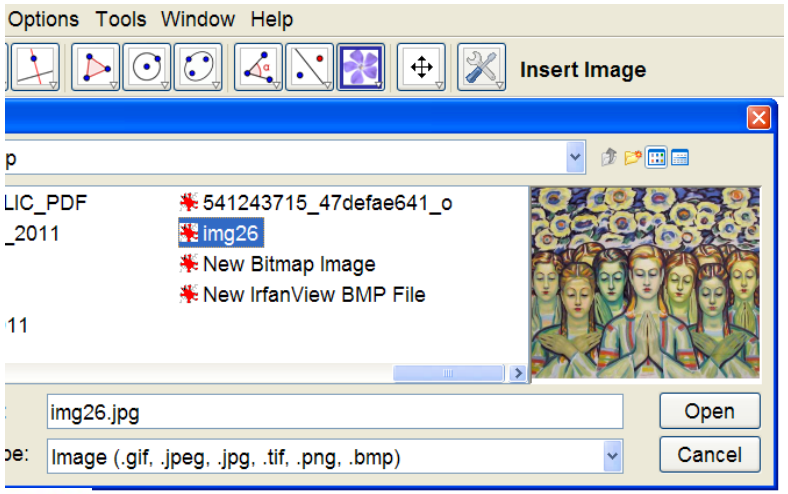


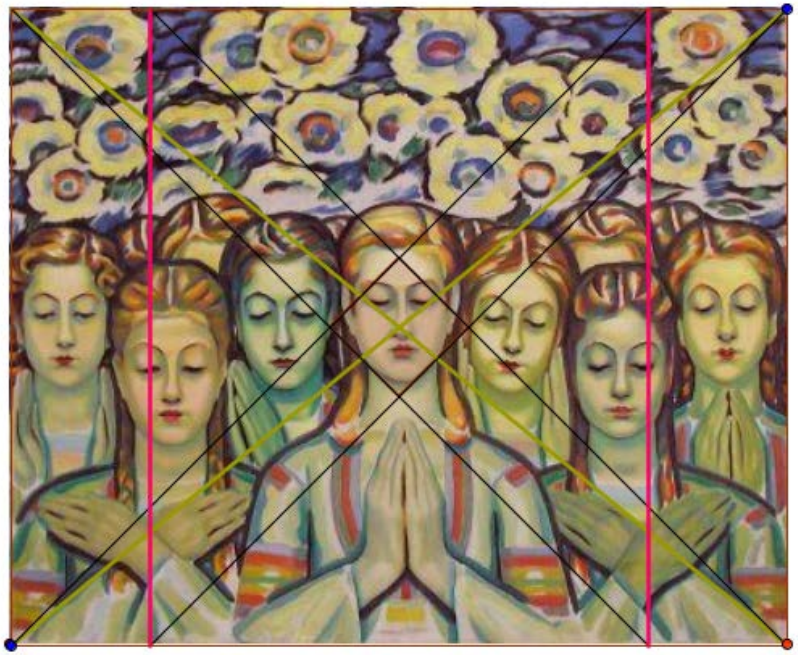




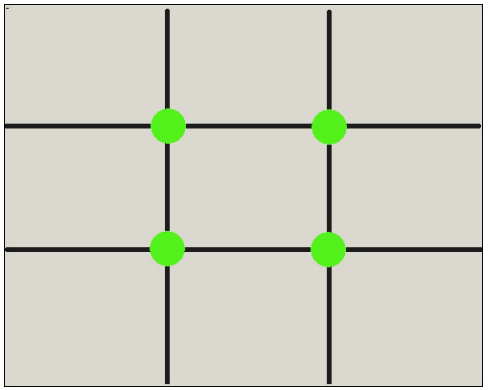
Inserting images on the GG screen

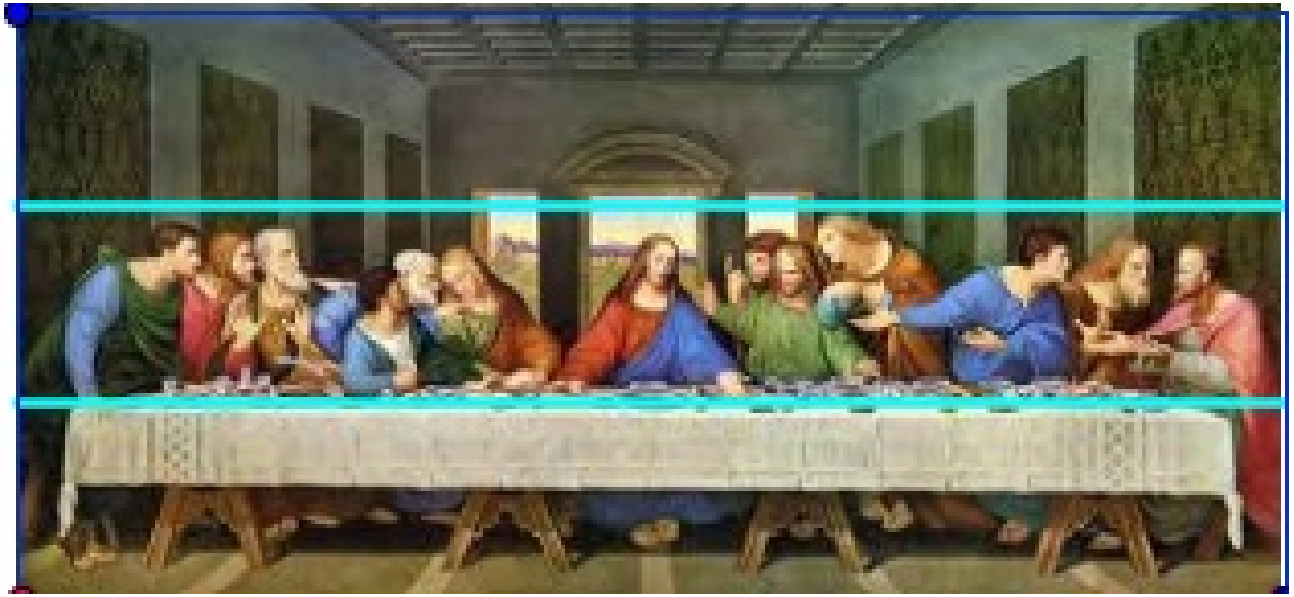


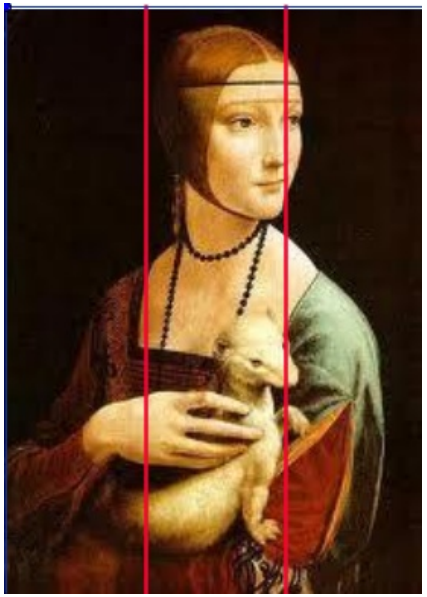




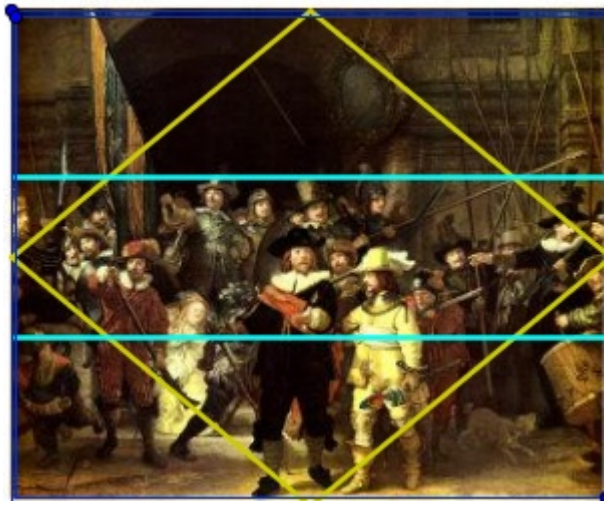
The rule of thirds

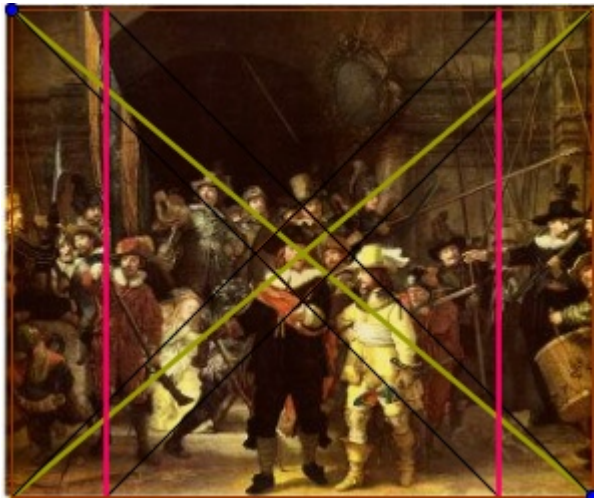




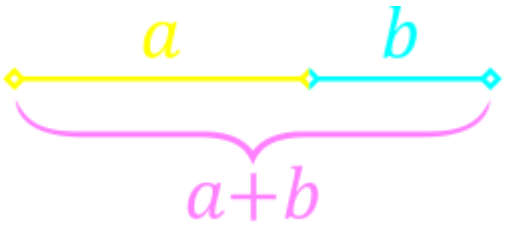


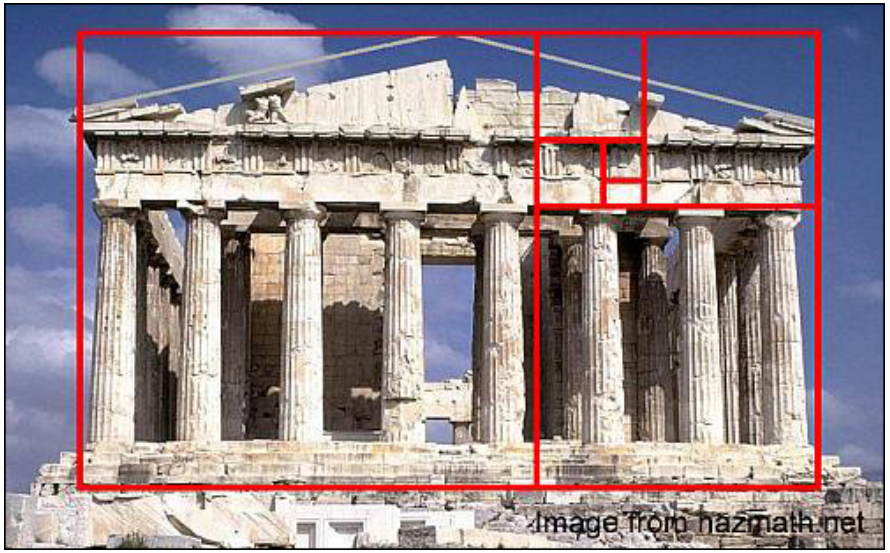
Combining the methods

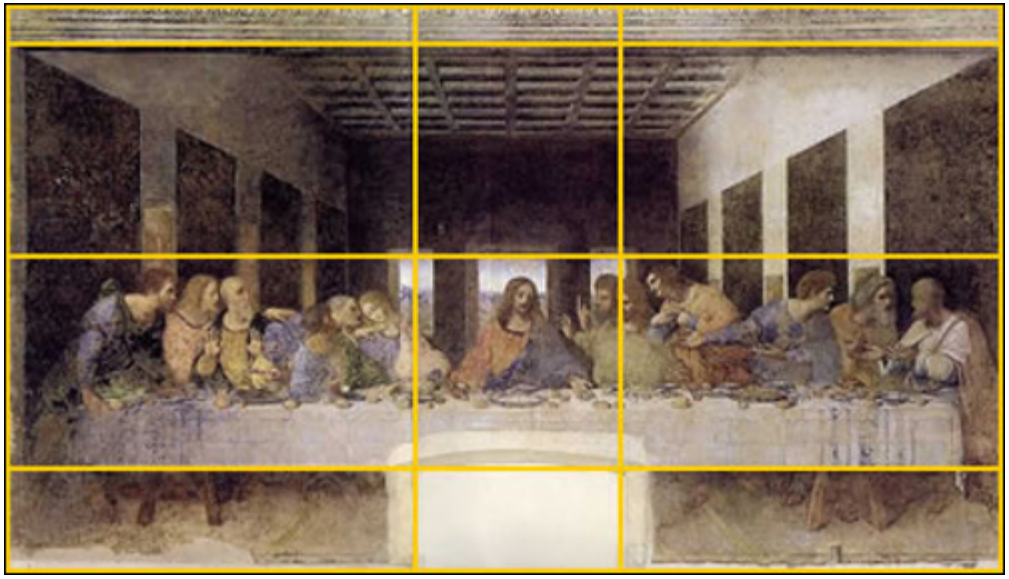




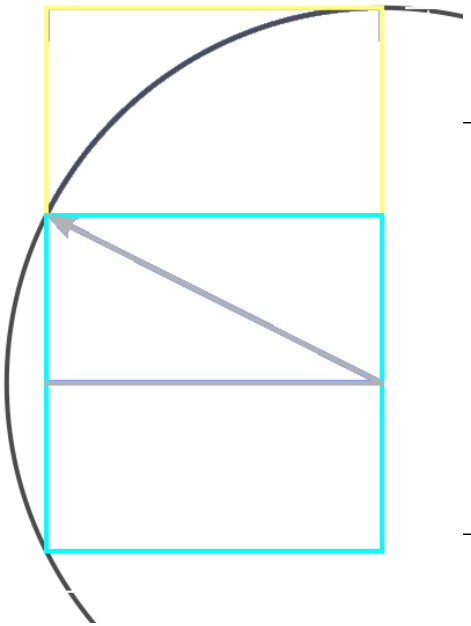
The golden section in art

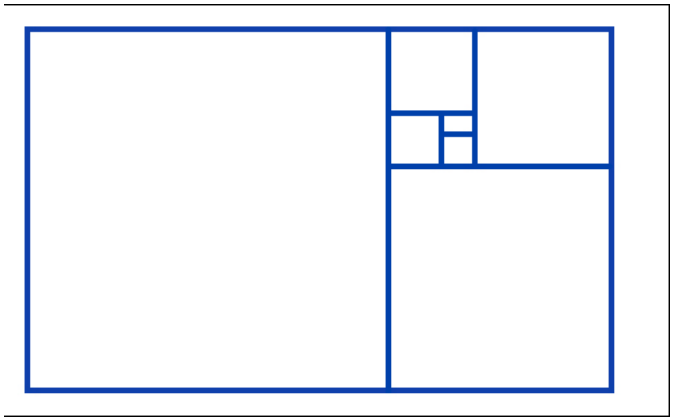


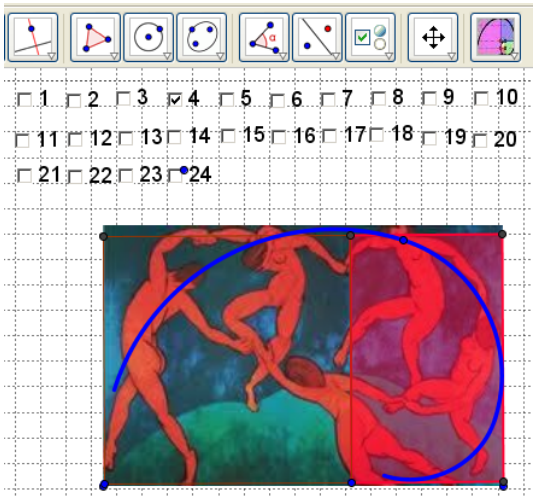


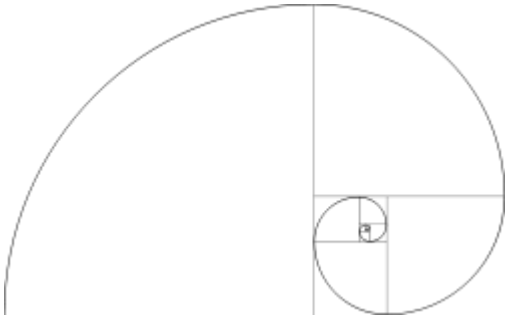


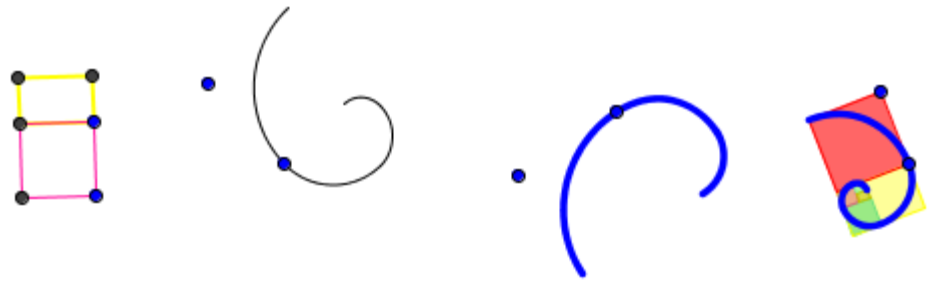
“Golden” buttons in GG







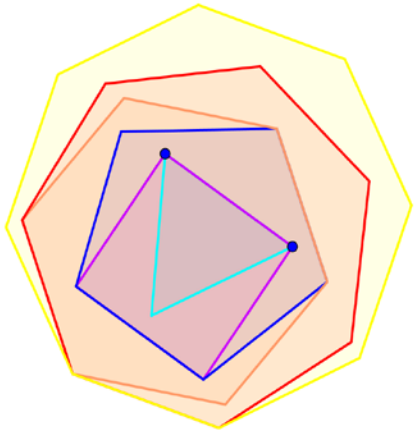




Dynamic mini-projects

1. Arrange for a picture in two ways (according to two methods for composition):
   - 6 persons at a birthday party sitting around a round table
   - a class of 24 pupils and their teacher
   - flowers and fruits
   - perfumes and an advertisement

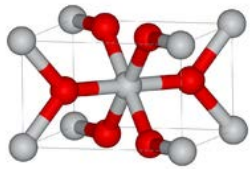
Explore the result with dynamic constructions and make corrections if necessary.



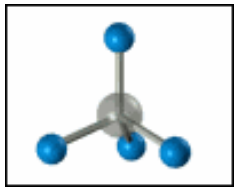
2. Create a dynamic construction in the style of the artist Max Bill

Visual Modelling based on symmetry









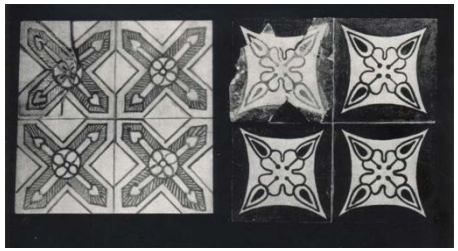


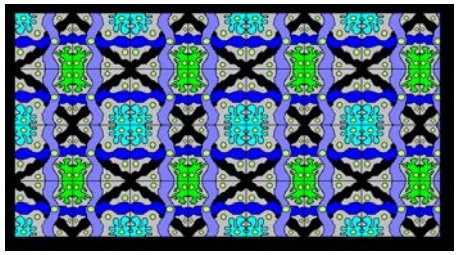


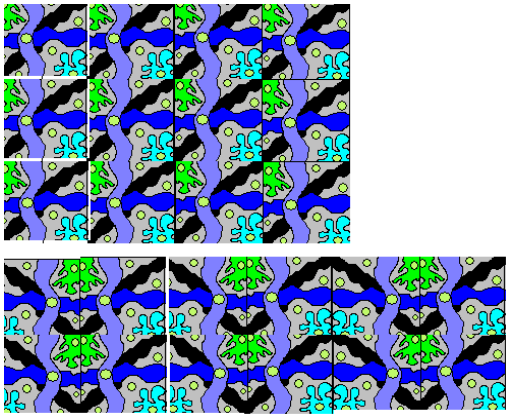


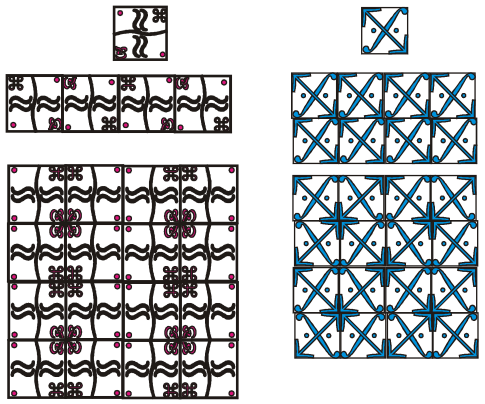

Congruences and design

Painted ceramics from Veliki Preslav and a modern tessellation

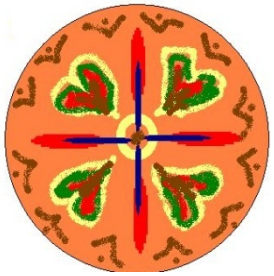


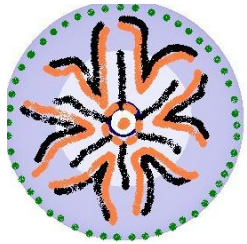




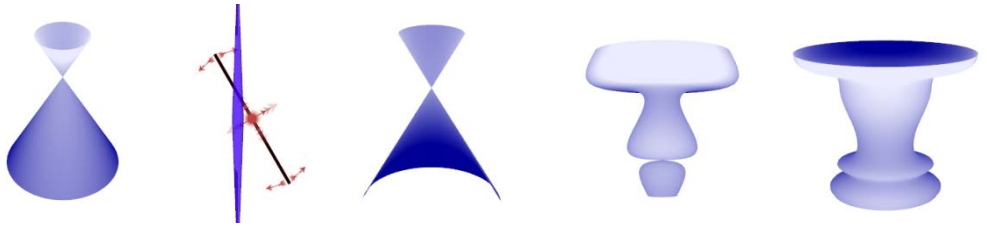


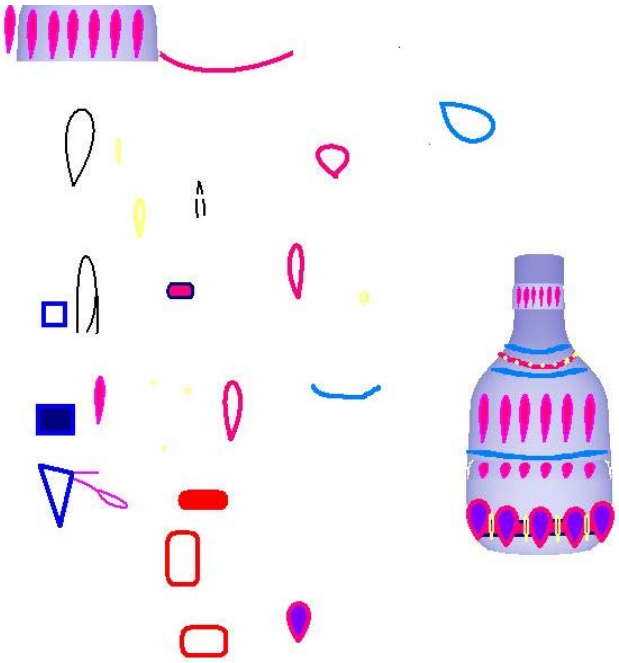
Model in the style of “Troyan drop “





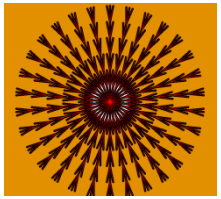
Modern and ancient artefacts based on rotation

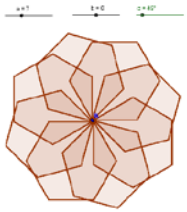
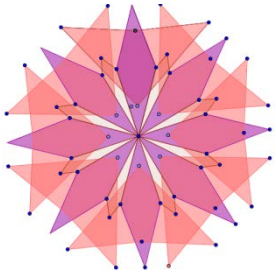
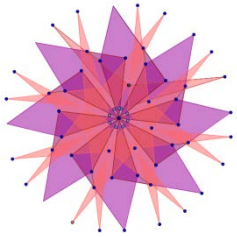
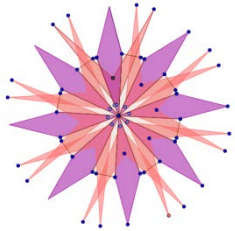
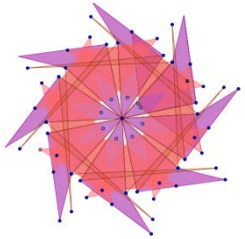
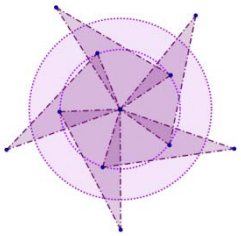
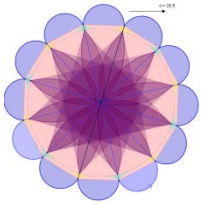




Wood-carved ceilings from Triavna and Plovdiv and some computer models



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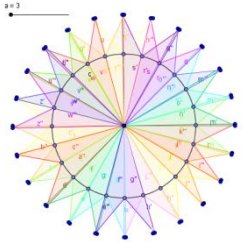

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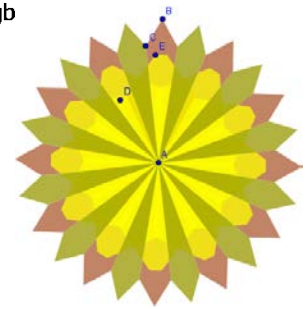
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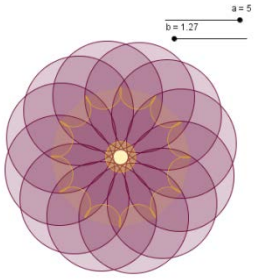

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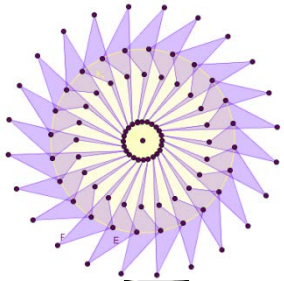

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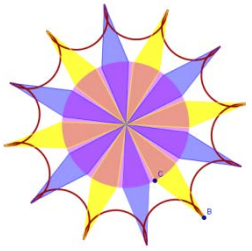
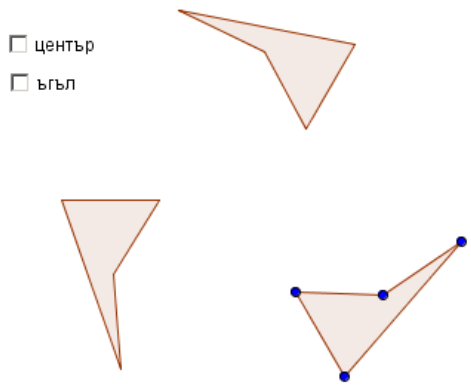

D10.ggb

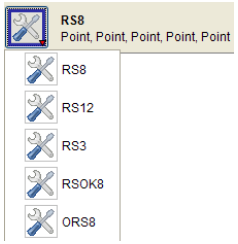
Harnessing the rotational symmetry dynamically in a design context

Number of rotations n				
Angle α				

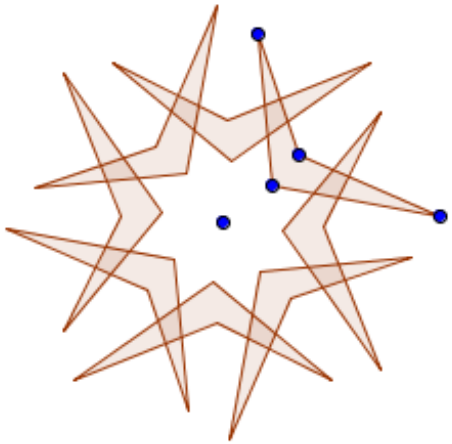


P22.ggb

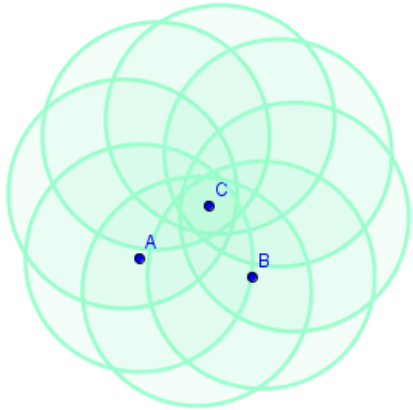
Create your own button (icon)



with a fixed angle of rotation



for rotational symmetry of a circle



Brs.ggb

Pro.ggb