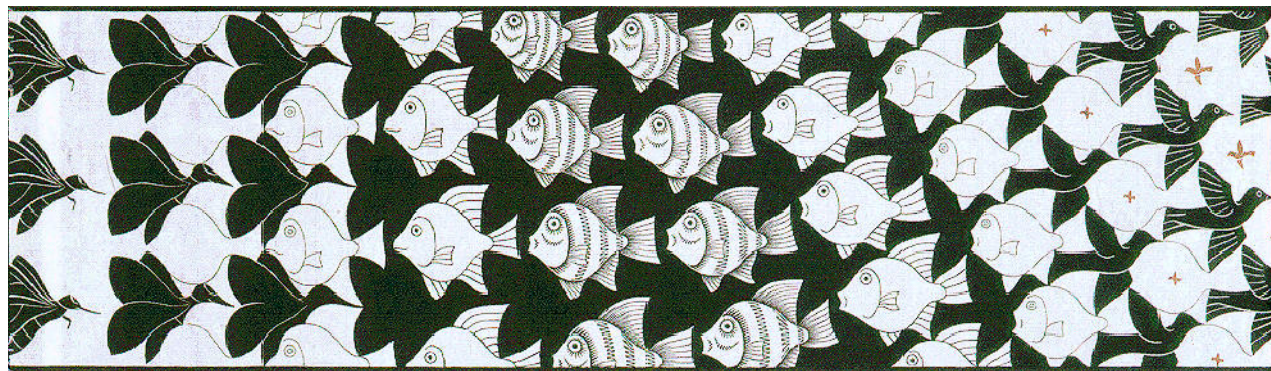
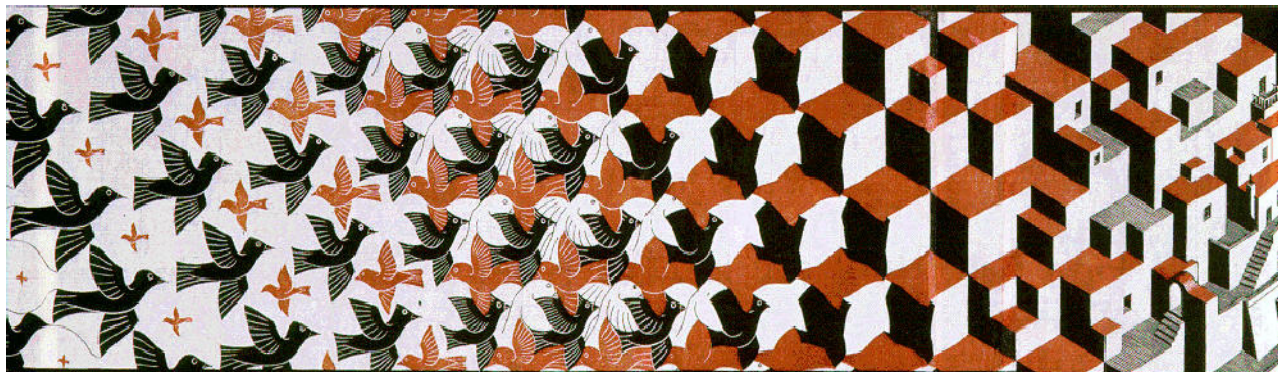
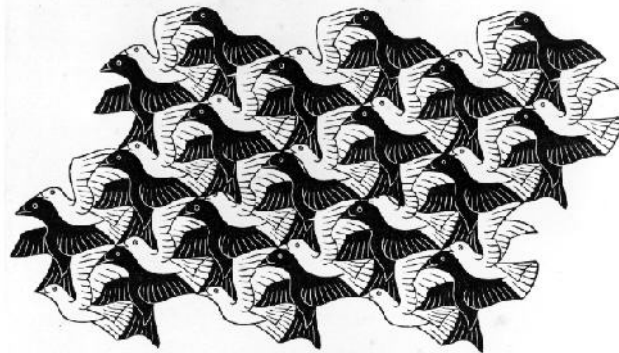
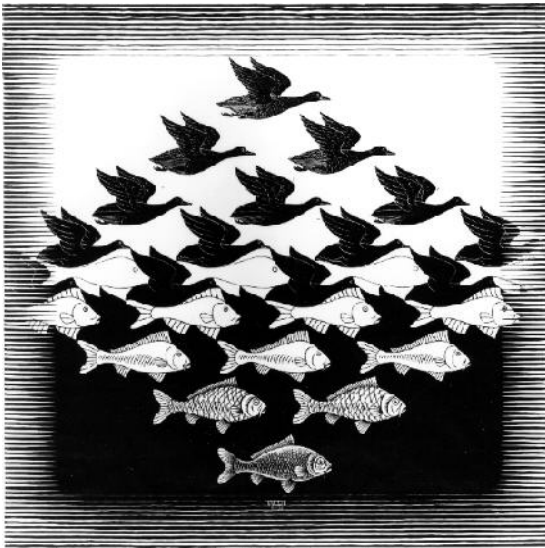




Spencer

handmade

TV-143



Metamorphosis / tessellation project

objective: through repetition of form, modified lines and shapes and positive and negative space (figure/ground), generate a design that shows an understanding of pattern and symmetry.

Using the M.C. Escher model and/or the mathematical constructs of tessellation, generate a graphic image or form (not too simple, but not too difficult) that repeats as both the figure and ground to form a pattern design.

The repeated section should (A) occur a minimum of four times, (B) show an understanding of the metamorphosis of the form, and (C) maintain a level of good craftsmanship. Students may use drawing tools and templates to make the designs, which should be approved prior to undertaking the final part of the project. Preliminary drawings may be completed in pencil, but final drawings must be done in ink.

(color may be added, if relevant to the design)

The designs may be either symmetrical or radial, and will be completed on white 12"x12" paper (square or circular format) or 6"x24" paper (horizontal or vertical format)

Maurits Cornelis Escher (1898-1972) is one of the world's most famous graphic artists. His art is enjoyed by millions of people all over the world, as can be seen on the many web sites on the internet.

He is most famous for his so-called impossible structures, such as Ascending and Descending, Relativity, his Transformation Prints, such as Metamorphosis I, Metamorphosis II and Metamorphosis III, Sky & Water I or Reptiles.

Art and Perception

"What is this so-called reality; what is this theory but a beautiful though totally human fantasy?
(Escher in Locher, 1992, p. 68)

A large part of Escher's popularity is due to his depictions of impossible worlds. His prints on this theme are based on his research into perspective.

The system making it possible to represent depth on a flat surface, such as a sheet of paper, was developed during the Renaissance, in the fifteenth century. One important law of perspective dictates that all receding parallel lines are to be represented on the plane as if they passed through a single point, the vanishing point.

Escher Technique.

Relief Printing/ Woodcut. Graphic form

The wood used for printing is sawn along the length of the tree, which makes the surface relatively soft. The wood should ideally be worked in the direction of the grain to ensure a clean cut. For the design, the same cutting tools are used as in linocut: penknife, gouge, and chisel.

Linocut

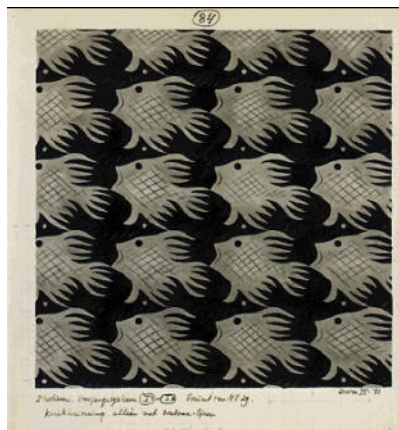
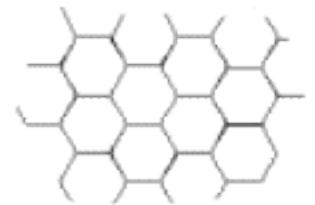
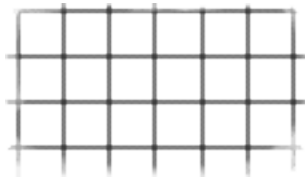
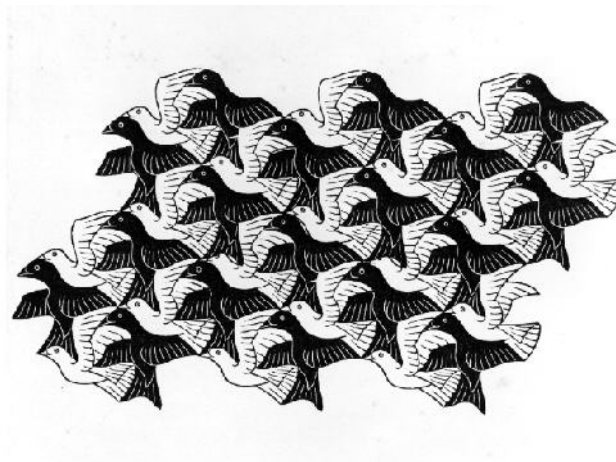
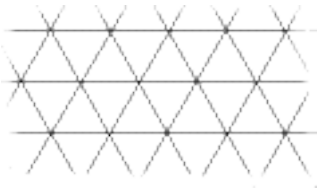
Printing from linoleum (jute cloth coated with a mixture of cork, linseed oil, gum, and resin) has two advantages: it is inexpensive, and it allows cutting in every direction. Several kinds of well-sharpened tools may be used for cutting: a penknife for contours and fine lines, a gouge (a v- or u-shaped metal rod with a handle) for thicker lines or entire surfaces, or a chisel with a rounded or flat blade for large areas. Unlike wood, linoleum has virtually no grain, and so it gives the printed sections a uniform appearance. One slight disadvantage is that fine lines are more difficult to execute than in wood.

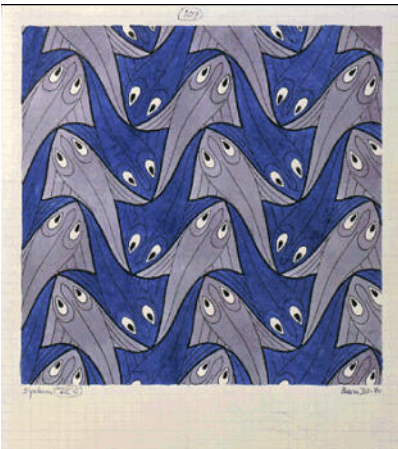
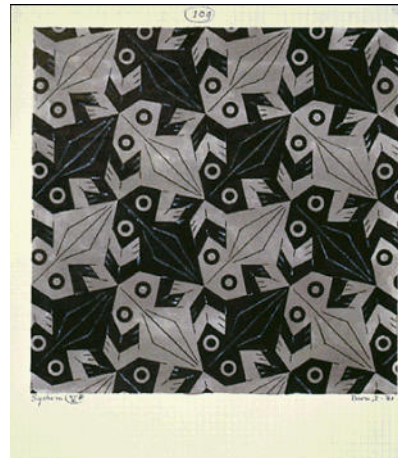
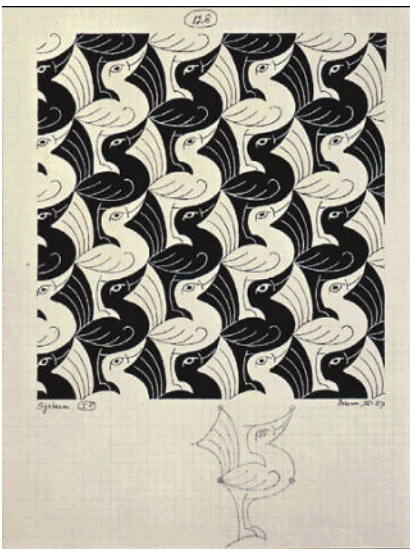
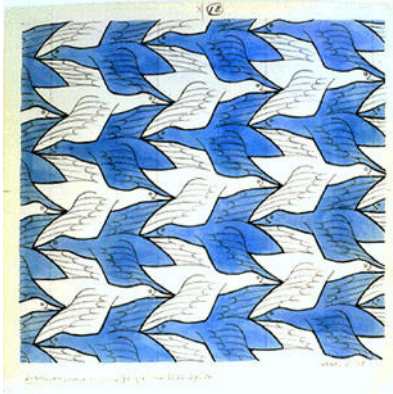
TESSELLATIONS

<http://www.mathacademy.com/pr/minitext/escher/index.asp#tess>

Regular divisions of plane, called “tessellations,” are arrangements of closed shapes that completely cover the plane without overlapping and without leaving gaps. Typically, the shapes making up a tessellation are polygons or similar regular shapes, such as the square tiles often used on floors. Escher, however, was fascinated by every kind of tessellation – regular and irregular – and took special delight in what he called “metamorphoses,” in which the shapes changed and interacted with each other, and sometimes even broke free of the plane itself.

It is true that mathematicians had shown that of all the regular polygons, only the triangle, square, and hexagon can be used for a tessellation. (Many more irregular polygons tile the plane – in particular there are many tessellations using irregular pentagons.) Escher exploited these basic patterns in his tessellations, applying what geometers would call reflections, glide reflections, translations, and rotations to obtain a greater variety of patterns. He also elaborated these patterns by “distorting” the basic shapes to render them into animals, birds, and other figures. These distortions had to obey the three, four, or six-fold symmetry of the underlying pattern in order to preserve the tessellation. The effect can be both startling and beautiful.





samples of work. M.C. Escher