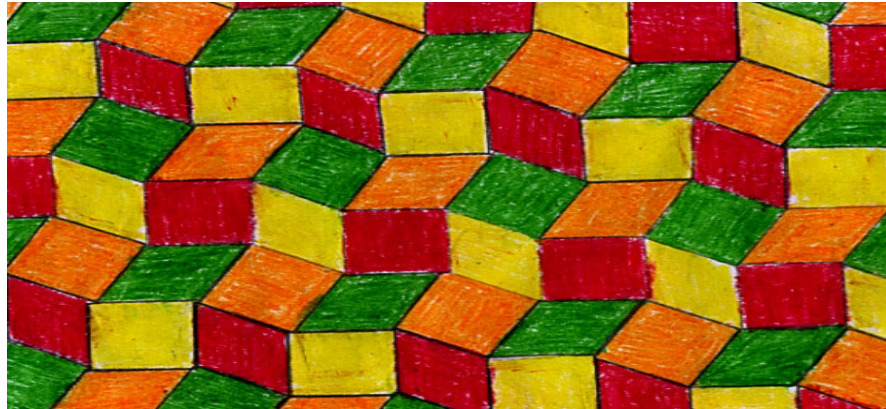


## Tantalizing Tessellations Using Index Cards



M.C. Escher (1898-1972), a Dutch artist, is best known for his work with tessellations. He derived his inspiration from the Islamic art in the Moorish Palace *Alhambra* in Granada, Spain (1922 and 1936). While fascinated with the Moorish mosaics, Escher made a significant departure from these abstract designs by including living things in his art such as horses (*Pegasus*, 1960), birds, and reptiles.

You will be creating designs called tessellations using transformations. With a little imagination and the use of color, you can tile the plane with your own “*tantalizing tessellations*” capturing the spirit of Escher.

1. Begin by drawing a continuous set of curved and/or broken lines from one corner of the longer edge of an index card to the other corner of the lower edge (figure 1). Use scissors to cut out along the series of curved and/or broken lines (*Jennifer Marsala, personal communication, April 19, 2004*).

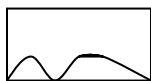


figure 1

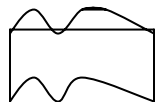


figure 2



figure 3



figure 4



figure 5

2. Translate this cut-out to the top of the index card and tape (figure 2).
3. Repeat step one along the width of the index card. Translate and/or rotate the cut-out to the opposite side of the card and tape (figures 3-5).

4. Use this template (figure 5) to tessellate a section of poster paper or a sheet of 11"x14" paper.
5. Look for an interesting design formed by the tessellation and use markers/pens and colors to enhance the design.
6. Create your own design using index cards and transformations of your choice to tessellate the plane.
7. Record each step of your transformation on a sheet of paper.
8. Look for a pattern/design and use markers, colors, and/or pens to create a "tantalizing tessellation".
9. Tape your instructions of how you made your template on the back of your "tantalizing tessellation". Post your work in the room for display and a gallery tour.
10. Go to the work of a partner group and discuss how to create the template for the design. Write a procedure for making the template.
11. Return to your small group and use the procedure to create the tessellation of your partner group. Compare your design with that of your partner group's work.
12. Observe all the work displayed during a gallery tour.