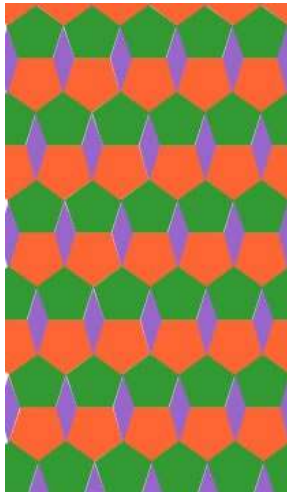


## Art in Math



### Tessellations

Here's a project that combines math and art together! Geometry and color theory are used to create an interesting design that explores spatial design concepts.

**Check out this page of artwork from artist [M.C Escher](#) and look for tessellations in his designs!**

[I suggest you visit [this site](#) to learn more about tessellations before starting the project.]

***For ages 10 and up.***

### Definition (from [www.wikipedia.com](http://www.wikipedia.com))

"A tessellation or tiling of the plane is a collection of plane figures that fills the plane with no overlaps and no gaps. One may also speak of tessellations of parts of the plane or of other surfaces. Generalizations to higher dimensions are also possible. The tessellation is perhaps most well-known today for its use in the art of M.C. Escher.

In Latin, a *tessella* was a small cubical piece of clay, stone or glass used to make mosaics. The word "tessella" means "small square" (from "tessera", square, which in its turn is from the Greek word for "four"). It corresponds with the everyday term *tiling* which refers to applications of tessellation, often made of glazed clay."

### Supplies:

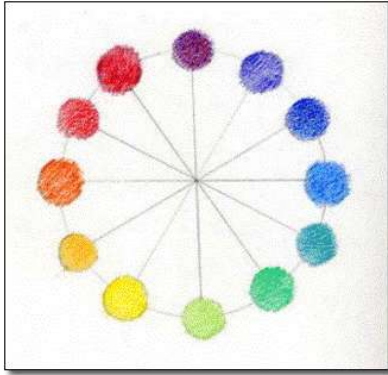
- Thin cardboard
- Scissors
- Ruler
- Pencil
- Construction Paper - various colors
- Glue stick
- White paper

### Directions:

1. On a piece of white paper, sketch a grouping of two or three shapes that can lock together and be repeated. These can be simple geometric shapes like squares, rectangles, triangles, and various polygons. They can also be made from curved shapes

that will interlock. The example above uses a pentagon and a diamond shape. Remember that you can turn the shapes around to fit!

2. Once your basic design is chosen, draw the three shapes onto the cardboard using a pencil and ruler. Cut out these shapes with the scissors.
3. Choose a color scheme using three colors that are equally spaced apart on the color wheel. This is called a "triad".



***Example of "triads":***

RED - BLUE - YELLOW

ORANGE - GREEN - VIOLET

BLUE/GREEN - YELLOW/ORANGE - RED/VIOLET

4. Using the cardboard shapes as templates, trace the shapes onto the colored construction paper using your chosen color scheme. Draw many of each shape and cut them out with the scissors.
5. Glue them onto a piece of white paper, interlocking the shapes. Trim the page so that edges match each other.