

Creating Art through Pattern

A Lesson based on the works of art in

Imaging by Numbers: A Historical View of the Computer Print

At the Mary and Leigh Block Museum of Art, Northwestern University

www.blockmuseum.northwestern.edu

January 16-April 6, 2008

Situated at the intersection of art, technology, and engineering the computer has been a vital tool for visual art. This groundbreaking exhibition presents a history of the computer print from the 1950s to the present, ranging from early experiments with computer codes to inventive uses of twenty-first century technologies.

Approximately 60 works are displayed, from early plotter line drawings to monumental colorful inkjet prints, by both pioneers such as Ben Laposky and Herbert Franke and contemporary artists like C.E.B. Reas and Pascal Dombis. *Imaging by Numbers* is curated by Block Museum senior curator Debora Wood and artist and independent curator Paul Hertz.

Pioneers in this field initially used methods of experimentation and new machines to create visually interesting lines and curves. These artists explored the idea that computers could be an artmaking tool, producing images and forms by computing information given in the form of numbers and equations. As this process developed and artists became more familiar with new technologies, they were able to create specific lines, forms and patterns while continuing to discover new and innovative ways to use this artmaking tool in their work.

This lesson explores the elements of patterns and layering in artmaking. Often times, artists may start with one shape or object and repeat it to create an entirely new artwork. In this lesson, students will experiment with repetition, layering, and design to expand one form into an entire artwork.

Goals of this Lesson:

1. To employ patterns, layering, and design to create an artwork.
2. To understand how one repeated form can create an entirely new work.
3. To recognize the differences between organic and inorganic forms.

Illinois Learning Standards fulfilled:

Fine Arts

State Goal 25: Know the language of arts.

State Goal 26A: Understand processes, traditional tools and modern technologies used in the arts.

Age Level: Elementary,

Middle, or High School

Estimated Time:

approximately 120

minutes-Lesson can be

broken up into 2 or 3

sections

Specific Topic: Creating

artwork through pattern

and layering

Subtopic: Elements of

design

State Goal 26B: Through creating and performing, understand how works of art are produced.

Suggestions for student assessment:

Evaluate student work using the following criteria. It is advisable to share the criteria with your class before asking students to begin the assignment. Does the student work:

1. Convey an understanding of patterns, layers, and design?
2. Realize that one form can be repeated to make a larger work?
3. Acknowledge how to use patterns, layers, and design effectively to create an artistic effect.

Teaching resources necessary to support this lesson: artworks displaying the use of repetition to create patterns from the *Imaging by Numbers* exhibition (or any other artworks displaying patterns and/or layering).

Lesson Plan:

I. Share and explain works from the *Imaging by Numbers* exhibition. Good artists to explore are Peter Beyls, Paul Brown, Pascal Dombis, Georg Nees, James Paterson, and Tony Robbin. (Use resource section below for additional images and information). Also feel free to use other artworks that you encounter that display design, repetition, and layering.

[10 minutes]

II. Discuss the artworks by asking the following:

- What forms can be found in the artworks?
- Are those forms repeated?
- Are the elements of design (line, shape, direction, size, color) at work?
- Is there layering in the artwork?
- Is there a focus on a single subject/form in the artwork?
- Would the viewer feel a different sensation from looking at the single form versus the repeated form?

[10 minutes]

III. If you are working with younger students, or students with little art background it would be helpful to discuss/create an art term dictionary with terms that apply to this lesson. An example can be found below in the resource section.

[10 minutes]

IV. Instruct students to draw a shape that has only straight lines using their pencil, ruler, and cardstock.*

[3 minutes]

V. Have students cut out the shape with scissors.*

[3 minutes]

Supply List

- ✓ Large colored paper
- ✓ pencils
- ✓ markers
- ✓ colored pencils
- ✓ Erasers
- ✓ scissors
- ✓ stencil shapes
- ✓ cardstock
- ✓ rulers
- ✓ tracing paper or Mylar

*If your students are too young to use scissors effectively, you can use pre-made organic and geometric shaped stencils to achieve the same effect.

VI. On large colored paper, instruct students to use their shape as a stencil. Tell students to create a pattern by repeating their shape so that it fills the entire page. Students may choose to color in the shapes, negative space, or anything else they desire with colored pencil, marker, or any other material you wish. However they decide to create their pattern, be sure to remind them to think about elements of design (line, shape, direction, size, color).

[15 minutes]

VII. Once students have completed their initial pattern, instruct them to create another stencil with their pencil and cardstock. However, this time students should create organic shapes— shapes with no straight edges.

[3 minutes]

VIII. When students have finished making their organic stencils, instruct them to create a pattern on their tracing paper (or Mylar). Again, students may choose any way they would like to create their patterns however be sure to instruct students not to color in their forms this time, but simply make a linear design.

[15 minutes]

IX. Have students hang their first patterns.

[2 minutes]

X. Instruct students to walk around the hung designs with their organic design in hand. Have students explore what their organic designs would look when interacting with other geometric designs by placing their tracing paper/Mylar on top of other student's geometric designs.

[5 minutes]

XI. Discuss layering by asking the following questions:

-Do the works look different when separated?

-Do the designs interact with each other? How?

-Is there a correlation between paper layers and layering in Photoshop/Flash? (for older students familiar with the programs)

[5 minutes]

XII. Once students have explored their designs with other student's designs instruct them to transfer their organic design onto their geometric, be sure to remind students that they may align, flip, or edit the drawing any way they want.

XIII. One option (if there is another method you would like to use, feel free to do so) of transferring the organic design from tracing paper to the opaque paper is to have students go back over their design with soft graphite pencils. Once students have created dark bold lines on top of their original design have students flip the tracing paper/Mylar over

so the graphite-side is placed directed onto their geometric pattern. Once the papers are aligned have students rub or color the back of their tracing paper/Mylar so that the graphite design on the reverse side transfers to the opaque paper. Be sure to remind students not to move their tracing paper/Mylar during the process or the lines won't come out crisp.

[10 minutes]

XIV. Once the linear design is transferred have students color in the forms, space, etc. to create a complete work.

[10 minutes]

XV. You may choose to have your students continue to layer shapes, organic, geometric, or drawing as you see fit.

[Undefined time]

XVI. Once your students have finished creating their layered patterns display them so that students can see each other's works.

[5 minutes]

XVII. Discuss by asking students:

-Was it hard to adapt one form into an entire artwork?

-How did you create your patterns?

-How did you use color effectively?

-Did your work change as you continued to add patterns? How?

[10 minutes]

Resources

Peter Beyls:

<http://www.verostko.com/algorist.html>

The site gives the general history and background on Beyls's work and the Algorist artists. Work found on the site can serve to display how repeated shapes are used to create a pattern.

Paul Brown:

<http://www.paul-brown.com/INDEX.HTM>

The artist site gives many examples of work that display repetition, elements of design, and layering in addition to the artist biography and statement. Specific works that would aid this lesson can be found under the *gallery* tab and then the *time released* tab. In the time released project Brown displays morphing from one pattern to another. Also of interest, under the *prints and drawings* tab, then the *recent prints* tab, *Sierpinski Cheesola* and *Autumn* display geometric forms while *Potshard* exhibits repeated organic forms. Finally, under the *prints* tab and then *Alien Spaces* tab, *Dancer* displays not only repeated forms, but also layering.

Pascal Dombis:

<http://www.dombis.com/>

The artist website contains resources about the artist, explanations of his work, and images of the work. Artworks particularly appropriate for this lesson plan are *Topo_Rizong*, *Antisana*, and *Rizong*. The works all display the use of repeated forms to create a pattern and layering of those patterns. *Topo_Rizong* and *Antisana* are especially helpful as the artist includes the progression of the work from the first, simple pattern and the steps taken thereafter to complicate it.

Georg Nees:

<http://www.chart.ac.uk/chart2004/papers/weiss.html>

The website serves as an introduction to computer art and gives an example and explanation of computer art through Nees's *Schotter*. The site explains how Nees created the work and gives an excellent image of the work. *Schotter* can be used in class to discuss the repetition of form and how that repetition can be altered to create a work.

James Paterson:

<http://www.presstube.com/project.php?id=235>

The link above displays a moving video piece on Paterson's website that is a great example of layering. The work is called *Davey Jones' Locker*.

Tony Robbin:

<http://tonyrobbin.home.att.net/>

The artist website displays work that uniquely uses patterns and geometric shapes. The site is an excellent resource to find images that relate to the lesson. To get to the images click on *Painting and Sculpture*. To enlarge the work, simply click on it.

Lesson Glossary

Design: A plan, or to plan. The organization or composition of a work; the skilled arrangement of its parts. An effective design is one in which the elements of art and principles of design have been combined to achieve an overall sense of unity.

Pattern: The repetition of any thing — shapes, lines, or colors — also called a motif, in a design; as such it is one of the principles of design.

Repetition: A principle of design, this term refers to a way of combining elements of art so that the same elements are used over and over again. Thus, a certain color or shape might be used several times in the same picture. Repetition also can contribute to movement and rhythm in a work of art.

Organic Shape: An irregular shape, or one that might be found in nature, rather than a regular, mechanical shape.

Geometric Shape: Any shape or form having more mathematic than organic design. Geometric designs are typically made with straight lines or shapes from geometry, including circle, ovals, triangles, rectangles, squares, and other quadrilaterals, along with such polygons as pentagons, hexagons, etc. Examples of geometric forms include spheres, cones, cylinders, tetrahedrons, pyramids, cube and other polyhedrons.¹

¹ All definitions were found on artlex.com