

Shapes and Patterns Teaching Resource

Ages 4–11 (Pre-K–Grade 5)

Materials needed:

- Paper
- Pencil
- Markers, crayons, and/or colored pencils

1 hour (includes three 20-minute activities)

Essential Questions:

- What is a shape? What is a pattern?
- What are geometric shapes and organic shapes?
- How are shapes combined to create patterns in interior design and in our general surroundings, inside and outside? What is interior design?



Part 1: Overview

Take a moment to virtually explore Glenview, the Museum's historic home, as well as Red Grooms' *The Bookstore* (see links below). In this teaching resource, we will discover and observe the many patterns typical of the **Arts and Crafts** movement. Floor tiles, ceiling stencils, wallpaper, and textiles will provide a vibrant backdrop for our discussion of pattern and symmetry in interior design and nature. After we observe and discuss, we will incorporate shapes and patterns into activities that include designing our own!

Look

- Go on our [360° Virtual Tour of Glenview](#)
- Explore [Glenview Historic Home](#)
- See Red Grooms' [The Bookstore](#)
- Around your room, your home, out your window

Discuss

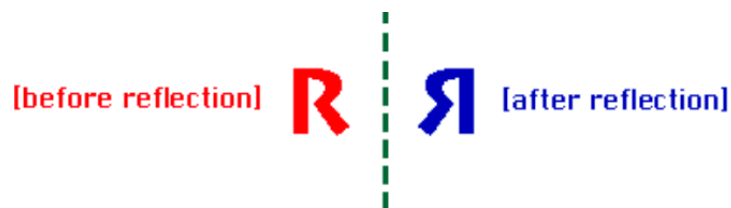
- What do you see?
- What types of geometric and organic shapes can you list?
 - » **Geometric** – e.g. circles, squares, triangles, and hexagons
 - » **Organic** – e.g. raindrops, petals, leaves, and clouds; irregular shapes you can find in nature
- Do you notice symmetry in any design around you? What are some types of symmetry?
 - » **Symmetry** refers to balanced proportions, matching in position, size, and shape, positioned around a center line or axis.
 - » **Rotational symmetry** is when elements are arranged around a central point:



- * **Translational, or line, symmetry** is when a pattern is repeated at even intervals, like on wallpaper:



- * **Reflectional, or mirror, symmetry** is when a replica of an image is flipped and placed across from the original:



- Where else do you find patterns, shapes, and symmetry in your life? Think about designs in your house on tiles, carpeting, or wallpaper. Look at blankets and sheets or pictures you may have on your walls. Look at things that you eat. Look outside your window and see if you can find more patterns.
- Where do you find patterns and symmetry in your clothes, on your body, in toys, cars, buildings, etc.?

Part 2: Patterns Around You (Activity 1)

Duration: 20 minutes

Materials needed:

- Paper
- Pencil
- Markers, crayons, and/or colored pencils

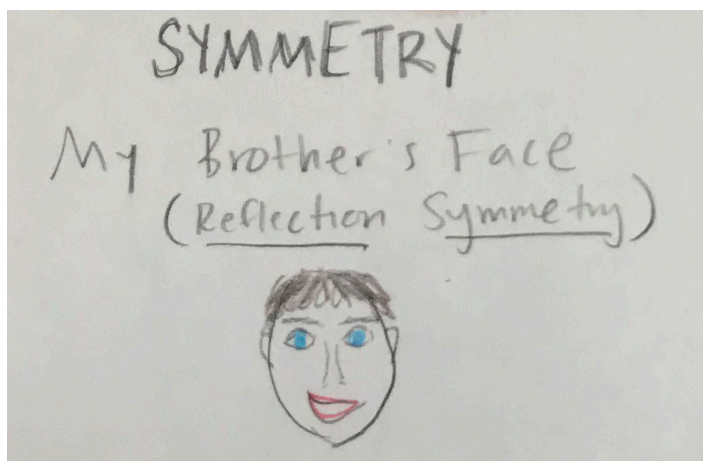
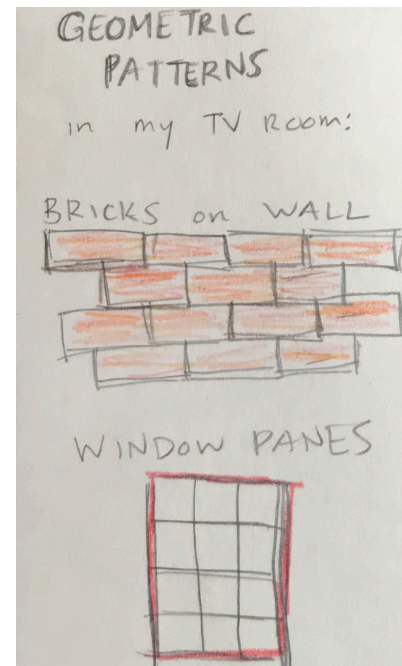
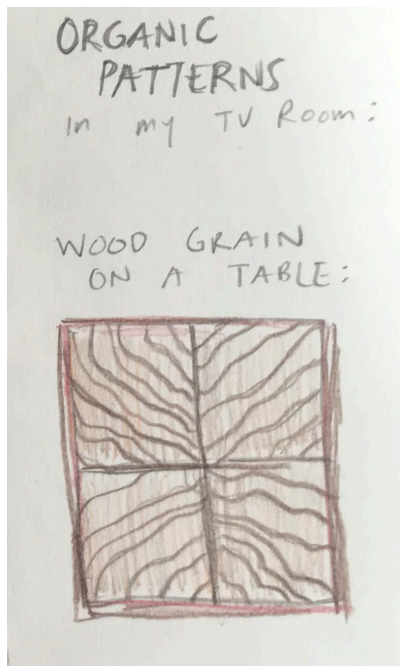
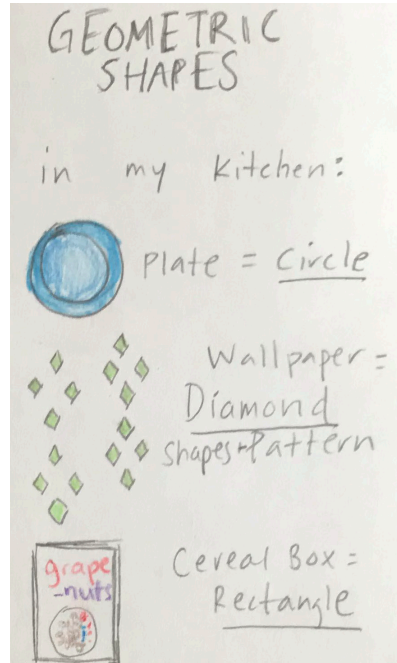
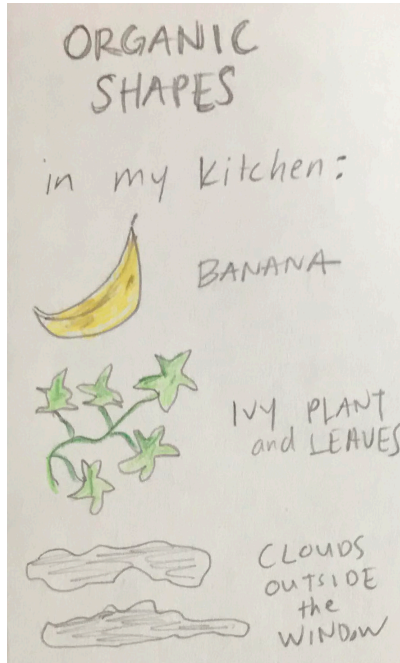
Procedure:

1. Explore your environment and hunt for patterns and designs.
2. Collect pattern data and record your findings on the activity sheet provided for your grade level (see pages below).
3. Once you find an example of each type of shape or pattern, draw or color what you find in the boxes on your sheet.
4. Don't forget to refer back to the glossary on the last page for any unfamiliar terms!

Share your work:

Take a photo of your work and post it to Instagram using the hashtags #MuseumFromHome and #HRMPatterns, and tag the Hudson River Museum.

Examples:



Part 3: Create Your Own Pattern (Activity 2)

Duration: 20 minutes

Materials needed:

- Paper
- Pencil
- Markers, crayons, and/or colored pencils

Procedure:

1. First, look at the image of a tile from Glenview's Great Hall (below) and see how many different shapes and patterns you can find.
2. Second, do the same by looking at images of Red Grooms' asymmetric and irregular patterns in *The Bookstore*.
3. After observing all these different types of patterns, make your own in the sheet provided below. Your pattern can be geometric, organic, or a combination of them both! Experiment with types of symmetry and reflection.
4. Don't forget to refer back to the glossary on the last page for any unfamiliar terms!

Share your work:

Take a photo of your work and post it to Instagram using the hashtags #MuseumFromHome and #HRMPatterns, and tag the Hudson River Museum.



Part 4: Make Some Noise! (Activity 3)

Duration: 20 minutes

Materials needed:

- Experiment with shapes and patterns without using paper and pencil—your body is your medium!

Procedure:

1. Make a shape with your body.
2. Rhythm is a pattern! Create a pattern by clapping or stomping your feet.
3. Work with other people around you to create an audio pattern. One person can clap, one person can stomp, one person can whistle, etc.
4. Dance!
5. Listen to your favorite song and find sounds and patterns of sounds.
6. For inspiration, watch this fun dance video about patterns by GoNoodle: <https://www.youtube.com/watch?v=BQ9q4U2P3ig>

Share your work:

Take a photo or video of your work and post it to Instagram using the hashtags #MuseumFromHome and #HRMPatterns, and tag the Hudson River Museum.



Part 5: Glossary

Asymmetry: Lack of balance or symmetry.

Balance: Harmony produced when elements are arranged evenly.

Design: An arrangement of lines or shapes created to form a pattern or decoration.

Geometric pattern: A series of geometric shapes (for example, square, circle, square, circle, etc.).

Geometric shape: Circles, squares, diamonds, rectangles, and any other shape that has lines, angles, and points.

Grid: A network of uniformly spaced horizontal and vertical lines (like graph paper!) that can help with creating a pattern over a large surface.

Medium: The materials that are used to create a work of art.

Organic pattern: A series of organic shapes (for example, leaves sprouting in a circle, or the petals on a rose, or branches of a tree).

Organic shape: Irregular shapes that are often found in nature and don't have perfect points and lines (for example, a drop of water, a leaf, a squiggly stick, etc.).

Pattern: A decorative design or natural design that is repeated.

Reflection: When a replica of an image is flipped and placed across from the original like a mirror image.

Rhythm: In music, the placement of sounds in time. Rhythm in visual art is a principle of design that suggests movement or action.

Rotational symmetry: When elements are arranged around a central point.

Symmetry: Balanced proportions matching in position, size, and shape positioned around a center line, axis, or point; repeated forms that follow one or more systems or rules.

Tessellation: Tiles or shapes that fit together perfectly without overlapping and without leaving any space between them.

Translational symmetry: A pattern repeated at even intervals along a straight line.

Part 6: Further Reading for Educators and Parents

Glenview Historic Home

The late nineteenth century was a time of great industrial change in the United States. The country transformed from a primarily agricultural society to an industrial power. Many huge fortunes were made, and the opulent lifestyle of the newly rich led to the period's nickname: the **Gilded Age**.

The interior plan and decoration of Glenview were inspired in large part by the English **Arts and Crafts** movement that started in the early 1870s. Reformers during this period rejected the Victorian notion that opulence comprised good taste, preferring instead hand craftsmanship. They also believed that objects made by hand as opposed to by machine were, in fact, morally superior and could influence and improve people's lives. In terms of style, reformers favored straight lines and woodwork, often "medieval" in appearance, simply decorated with stylized floral or geometric designs either incised or inlaid with contrasting woods. Tiles were also popular.

Natural forms in conjunction with medieval, oriental, and Near Eastern motifs were often the basis for the English Arts and Crafts designs. Glenview's interior uses English reform ideals as a basis for design and decoration, incorporating other styles where suitable.

Red Grooms

Red Grooms, a cultural icon since the Pop Art movement of the 1960s, creates paintings and sculptures with bright colors, expressionist verve, and theatricality that have an immediate impact and accessibility. Raised in Nashville, Tennessee, Grooms moved to New York in 1956 and immersed himself in the downtown cultural scene. He made films and participated in "Happenings" (improvised or spontaneous theater pieces)—both of which involved the creation of artistic stage sets. From *City of Chicago* in 1967 to *Ruckus Manhattan* in 1975, Red Grooms developed large-scale artworks that were complex environments inviting audience participation.

The Bookstore, which was the first of Grooms' environmental sculptures to be a permanent installation in a museum, incorporates many of the themes that run through his work: the marriage of art and commerce, the clash of high and low culture, colorful New York characters, humor, and an inviting three-dimensional space that envelops and transports the viewer.

An atmosphere of exuberance immerses visitors in dazzling color, decoration, and pattern, which recall the ornamentation of late nineteenth-century Victorian interiors like those found in Glenview, particularly in their *horror vacui*, or fear of empty space.

Part 7: Standards

Common Core Learning Standards

English Language Arts

Reading Informational Text

- Key Ideas and Details: CCSS.ELA-LITERACY.RI.K-2.1
- Range of Reading and Level of Text Complexity: CCSS.ELA-LITERACY.RI.K-2.10

Speaking and Listening

- Comprehension and Collaboration: CCSS.ELA-LITERACY.SL.K-2.1-3
- Presentation of Knowledge and Ideas: CCSS.ELA-LITERACY.SL.K-2.4-6

Language

- Vocabulary Acquisition and Use: CCSS.ELA-LITERACY.L.K-2.4-6

Mathematics

Geometry

- Identify and describe shapes: CCSS.MATH.CONTENT.K.G.A.1-3
- Analyze, compare, create, and compose shapes: CCSS.MATH.CONTENT.K.G.B.4-6
- Reason with shapes and their attributes: CCSS.MATH.CONTENT.1-2.G.A.1-3

Measurement and Data

- Describe and compare measurable attributes: CCSS.MATH.CONTENT.K.MD.A.1

New York State Learning Standards

Mathematics, Science, and Technology

Standard 3: Mathematics

English Language Arts

Standard 1: Language for Information and Understanding

Standard 3: Language for Critical Analysis and Evaluation

Standard 4: Language for Social Interaction

The Arts

Standard 1: Creating, Performing and Participating in the Arts

Standard 2: Knowing and Using Arts Materials and Resources

Standard 3: Responding to and Analyzing Works of Art

Social Studies

Standard 1: History of the United States and New York

Pattern Exploration: Pre-K & Kindergarten

Geometric Shapes

Organic Shapes

Geometric Patterns

Organic Patterns

Symmetry

Pattern Exploration: Grades 1 & 2

Geometric Shapes

Organic Shapes

Geometric Patterns

Organic Patterns

Line Symmetry

Rotational Symmetry

Grid

Pattern Exploration: Grades 3–5

Geometric Shapes

Organic Shapes

Geometric Patterns

Organic Patterns

Translational Symmetry

Rotational Symmetry

Tessellation

Grid

Create your own original pattern by drawing it. Use color in your design and pattern.