

Patterns Here, There, and Everywhere

This lesson was created as a supplement to the *Patterns Here, There, and Everywhere* program at the National Building Museum. It is designed to be used in your classroom independently, or as an activity before or after a school program at the Museum. For more information about and to register for the National Building Museum's school programs, visit <http://www.nbm.org/schools-educators/school-visit/>.

The *Patterns Here, There, and Everywhere* program introduces pre-kindergarten through second grade students to patterns and helps students understand their presence in architecture, in other media, and in their everyday lives. Patterns are found everywhere and can help students make connections and predict what will come next. They help young people make sense of the world by organizing it into groupings that can be easily understood. Recognizing patterns will create a foundation for analyzing problems and designing solutions.

National Building Museum

Created by an act of Congress in 1980, the National Building Museum explores, celebrates, and illuminates achievements in architecture, design, engineering, construction, and planning. Since opening its doors in 1985, the Museum has become a vital forum for exchanging ideas and information about such topical issues as managing suburban growth, designing and building sustainable communities, and revitalizing urban centers. A private, nonprofit institution, the Museum creates and presents engaging exhibitions and education programs, including innovative curricula for school children.

Over the past two decades, the Museum has created and refined an extensive array of youth programming. Each year, approximately 50,000 young people and their families participate in hands-on learning experiences at the Museum: 2-hour-long school programs for grades K–9; major daylong festivals; drop-in family workshops; programs helping Cub and Girl Scouts earn activity badges; and three innovative outreach programs, lasting between 30 and 60 hours, for secondary school students. The Museum's youth programming has won the Washington, D.C., Mayor's Arts Award for Outstanding Contributions to Arts Education and garnered recognition from the National Endowment for the Arts.



NATIONAL BUILDING MUSEUM
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Red Line Metro, Judiciary Square

Glorious Glass

The history of stained glass is rooted in architecture and dates back hundreds of years. Artists drew inspiration from religion, nature, and geometric forms. Frank Lloyd Wright, a famous American architect (1867–1959), often created windows in people’s homes using shapes and patterns. Wright believed that “...glass, more than any other architectural material, offered the most expressive and cost effective means to introduce pattern into a space and create special effects of light.” Today artists employ many of the same techniques used in the past to create stained glass windows for buildings. Shapes, color, and patterns are used to influence a building’s appearance.

OBJECTIVES

Students will:

- recognize and describe shapes and patterns used in stained glass windows and explain how artists use shapes, colors, patterns, and light to create a mood within windows;
- apply knowledge of patterns to create a stained glass window using paper and cellophane; and
- describe and evaluate patterns found in student-designed glass windows.

NATIONAL STANDARDS OF LEARNING

- Language Arts 4
- Mathematics Algebra
- Social Studies 4
- Visual Arts 1, 3

DURATION

One class period,
45–60 minutes

MATERIALS

- Pencils
- Paper (8.5 x 11")
- Clear contact paper (available at most hardware stores) cut 4 x 8"
- Scissors
- Colored paper, tissue paper, or colored cellophane
- Colored tape (optional)
- Images of stained glass windows

LESSON PROCEDURE

1. Introduce stained glass and its role in architecture.
2. Design stained glass.
3. Exhibit and discuss students' work.

TEACHER PREP

- Collect contact paper, cellophane, colored tape (optional), colored paper, or tissue paper
- Cut contact paper to 4 x 8" pieces
- Collect images of stained glass from books, magazines, etc.

PATTERN VOCABULARY

Architecture, Built Environment, Pattern, Shape

LESSON PLAN

1. Introduce Stained Glass and Its Role in Architecture. (10 minutes)

- Show students some pictures of stained glass windows in houses, places of worship, and civic buildings.
- Ask them to identify shapes and patterns within the windows as seen in the pictures.
- Explain how artists use shapes, colors, patterns, and light to create a mood within windows of great beauty.

2. Design Stained Glass. (30–40 minutes)

- Ask students to draw a stained glass window using a pencil and sheet of 8.5 x 11" paper. Their windows must contain shapes that form a pattern or a series of patterns.
- Have each student trace his or her design on colored paper or cellophane. Have each student cut out his or her design.
- Give each student a 4 x 8" piece of contact paper and have each fold it in half.
- Encourage students to lay out their design before peeling off the nonadhesive backing of the contact paper. Have them place their pattern on one half of the contact paper before folding the other half onto it—like a sandwich. Students may need help since the contact paper can be difficult for them to use by themselves.
- Frame the windows with colored tape.

3. Exhibit and Discuss Students' Work. (10–15 minutes)

- Exhibit students' "stained glass" on the windows of classroom.
- Have students compare and contrast the windows. Ask them a series of questions.
- Possible questions:
 - Which windows use colors as their primary patterns?
 - What colors are they?
 - Which windows use shapes as their primary patterns?
 - What shapes are they?
 - Do the windows change the classroom's look and feel? If so, how?

NOTES: