

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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202.272.2448/www.NBM.org
Red Line Metro, Judiciary Square

Designing Stamps, Decorating Streets

Since students have created patterns using architectural stamps during their field trip to the National Building Museum, have them now create their own stamps that reflect the buildings in their community.

OBJECTIVES

Students will:

- identify different buildings found in cities and design building stamps to use to create a streetscape;
- recognize and describe patterns created by shapes, numbers, and objects; and
- experiment and infer what happens when elements of patterns change.

NATIONAL STANDARDS OF LEARNING

Mathematics Algebra

Social Studies 3, 4

Visual Arts 1, 3

DURATION

Two class periods,
45–60 minutes each

MATERIALS

- Optional: Streetscape Scavenger Hunt Student Worksheet, p. 33
- Sheets of Styrofoam that are 1" or 2" thick, should be cut into 4 x 4" blocks
- Paper (8.5 x 11")
- Tubes of acrylic paint, 2-4 different colors
- Ink or painting rollers (3" wide roller brush)
- Butcher block paper
- Pencils
- Crayons
- Paper plates
- Tape

LESSON PROCEDURE

1. Discuss different types of buildings.
2. Design stamps.
3. Create a streetscape.
4. Identify patterns in students' work.

TEACHER PREP

- Collect Styrofoam, paper, acrylic paint, 3" wide roller brushes, butcher block paper, paper plates, pencils, crayons, and tape
- Cut 1" or 2" thick Styrofoam into 4 x 4" blocks
- Optional: Photocopy worksheet, p. 33, for each student
- Prep printing station by putting a squirt of each color of paint on different paper plates and place 1–2 ink or painting rollers with each paper plate

PATTERN VOCABULARY

Alternating Pattern, Architecture, Ascending Pattern, Built Environment, Descending Pattern, Pattern, Progressive Pattern, Repeating Pattern

LESSON PLAN

1. Discuss Different Types of Buildings. (5 minutes)

- Ask students to recall important buildings such as houses, stores, schools, libraries, bridges, landmarks, and parks in their community (or the community around their school) and record their comments.
- Optional: Have students complete the Streetscape Scavenger Hunt worksheet, p. 33, for inspiration.

2. Design Stamps. (30–40 minutes)

- Assign each student to a building, bridge, landmark, or park.
- Using a sheet of paper and a pencil, ask each student to draw his or her structure and recall color, shapes, and patterns.
- Once their sketches are complete, give each student a 4 x 4" block of Styrofoam and ask each to copy his or her drawing onto the Styrofoam. Students can etch their designs in the Styrofoam using the point of a pencil.

3. Create a Streetscape. (15–20 minutes)

- Roll out a long sheet of butcher block paper.
- Using the ink or painting rollers, have students cover their architectural stamp with paint.
- Ask them to place their building stamp on the butcher block paper to create a street or several streets.
- Once the paint is dry, have students draw trees, fences, and street signs.

4. Identify Patterns in Students' Work. (30–40 minutes)

- Ask students to analyze their work and identify the patterns they see. Ask them to locate patterns using colors, shapes, building types, and numbers. Record their patterns at the top of the butcher block paper. Ask students if they can differentiate between patterns. Can they identify alternating, progressive, and repeating patterns?
- Following the same process outlined above and using the stamps that the students have made, create a new street that has their buildings, bridges, landmarks, and parks grouped by alternating and repeating patterns.
- Have the students compare and contrast the streets.
- Possible questions:
 - Ask them which aspects of the streets are similar?
 - Which aspects are different?
 - Which streets do they like better and why?
 - Does the use of patterns, or lack thereof, affect their decision?

Taking It Further

- Display students' art around the classroom.
- Create group or individual streets using buildings from magazines and newspapers.

NOTES:

Streetscape Scavenger Hunt Student Worksheet

NAME:

At the National Building Museum you found patterns throughout the building. Groups of buildings and streets can also form patterns. Identify and recreate patterns from the neighborhoods below.

Uptown

An Urban Neighborhood



Pattern #1

Pattern #2

Shadybrook

A Suburban Neighborhood

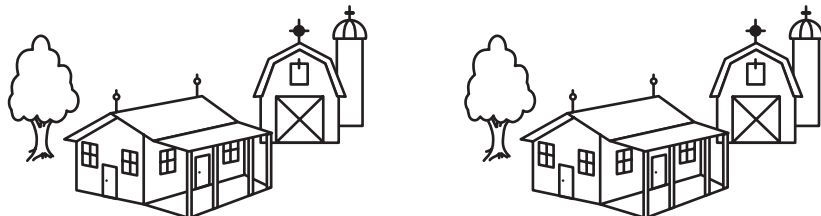


Pattern #1

Pattern #2

East Meadow

A Rural Neighborhood



Pattern #1

Pattern #2