

NATIONAL BUILDING MUSEUM

EDUCATOR RESOURCE PACKET GRADES PRE-K–2



PATTERNS: HERE, THERE, & 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://go.nbm.org/schoolvisit>.

The *Patterns Here, There, and Everywhere* school program helps students in grades pre-K through one recognize patterns and discover their importance in the world around them. Whether a series of windows, columns, or different materials, students begin to understand that patterns are an integral part of the built environment.

About the National Building Museum

The National Building Museum is America's leading cultural institution dedicated to advancing the quality of the built environment by educating people about its impact on their lives. Through its exhibitions and educational programs, including innovative curricula for students, as well as online content and publications, the Museum tells the stories of the world people design and build.

The Museum is an independent, non-profit institution and is located in a historic landmark structure at 401 F Street NW, Washington, D.C. 20001. Connect with the Museum online at www.nbm.org, on Twitter at @BuildingMuseum, and on Facebook at www.facebook.com/NationalBuildingMuseum.

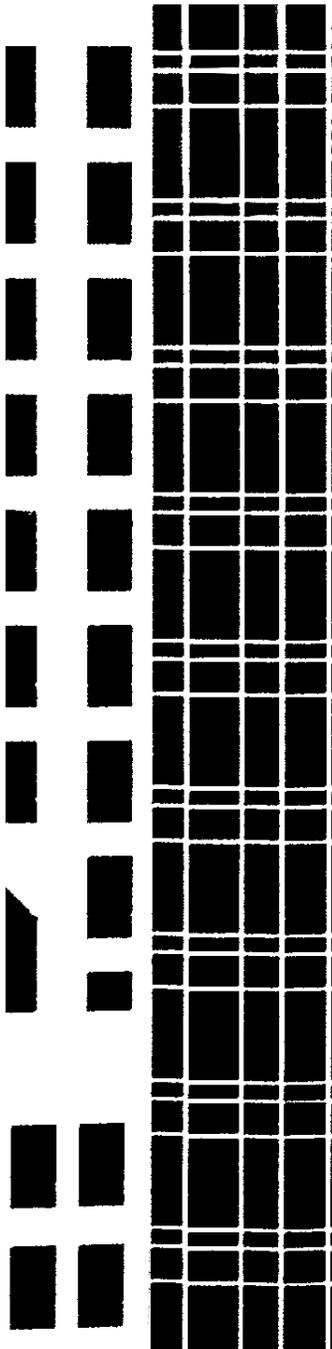
Shhhh Shapes, Pssst Patterns

National Standards of Learning: Mathematics – Algebra; Social Studies – 3, 4; Visual Arts – 1, 3

Duration: Two class periods; 45 – 60 minutes each

Overview

Learning to recognize how color, pattern, texture, and size create the overall appearance of buildings is important to understanding why places look the way they do. By locating visual clues and making sense of them, students will begin to appreciate architecture and decisions made by architects, urban planners, and engineers. This lesson, which introduces students to basic shapes in architecture, will prepare them for subsequent, deeper exploration of buildings and patterns.



Objectives

Students will:

- Identify shapes
- Recognize and describe patterns created by shapes, numbers, and objects
- Describe patterns found in buildings and how they contribute to the building's appearance.

Materials

- Copies of 2 worksheets for each student, pp. 12–15
- Crayons or markers
- *Optional:* photographs of the White House and Fredrick Douglass house

Teacher Prep

- Photocopy worksheets, pp. 21–24
- *Optional:* research pictures of the White House and Fredrick Douglass House

Vocabulary

- Alternating Pattern
- Arch
- Architecture
- Ascending Pattern
- Built Environment
- Column
- Descending Pattern
- Pattern
- Progressive Pattern
- Repeating Pattern
- Shape

Lesson Plan

1. Discuss Shapes and Patterns. (15 minutes)

- Introduce a variety of shapes to students.
- Explain that one circle is a shape, but two circles together form a pattern.
- Define a pattern as something that repeats.
- Give examples of alternating, ascending, descending, progressive, and repeating patterns using shapes, colors, numbers, letters, nature, and buildings.

2. Introduce Shapes and Patterns Found in Buildings. (25 minutes)

- Explain that all buildings contain shapes.
- Many building shapes take architectural form as windows (squares), columns (lines), doors (rectangles), and towers (triangles) and often create patterns.
- The students' school, town, and Washington, D.C., where the National Building Museum is located, have endless examples of architectural shapes and patterns. Ask for examples.
- Give students the *Patterns in Buildings* Student Worksheet, pp. 12–13. They will use these worksheets to find patterns in images of two Washington, D.C. buildings.
- *Optional:* Show pictures of the White House and Fredrick Douglass House as additional visual aids.

3. Find and Record Patterns in the School Building. (30 minutes)

- Explain to students that they will now explore their school to find patterns. As a class, spend 10-15 minutes examining the outside or inside of the school. The *Patterns at School* Student Worksheet, pp. 14–15, is designed to help students identify shapes and patterns in buildings by examining their overall form and the sum of their parts.
- This will prepare them for their field trip where they will explore the Museum's architectural patterns firsthand.

4. Discuss the Influence of Patterns on the “Feel” of a Building. (15 minutes)

- After students have completed their worksheets, review their patterns.
- Ask them if they think the shapes and patterns of each building make it appear quiet or loud, bright or dull, simple or complex.
- Explain to them that the sequence or rhythm of certain shapes and patterns often contributes to the overall “feel” of a place.

Taking it Further

- Have each student create a sketch of the building in which he/she lives (house, apartment, etc.). Note shapes and patterns.
- Have the class or individual students use magazines, catalogs, and newspapers to create a collage of houses using patterns as the guiding element.

Name: _____

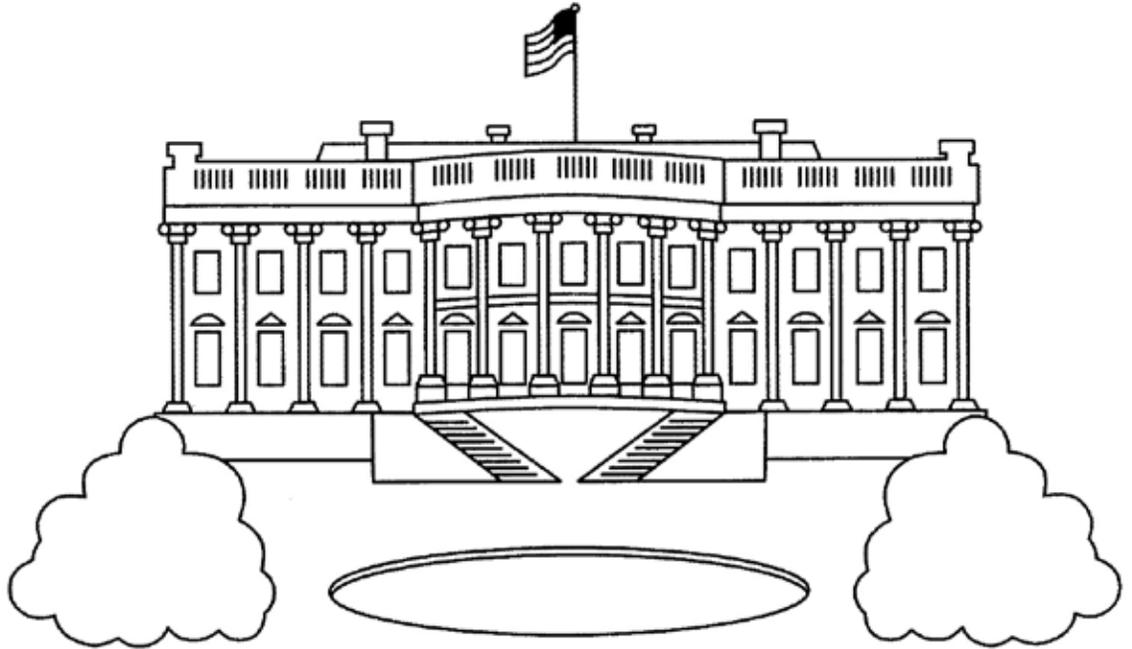
Student Worksheet

Patterns in Buildings

Each building on this worksheet is made up of shapes and patterns.

1. Find patterns in the building and draw them on the lines below.
2. Look for circles, half circles, squares, triangles, and lines.

The White House
Washington, D.C.



Pattern Example



Can you find two patterns?

Pattern #1

Pattern #2

The Fredrick Douglass House
Washington, D.C.



Pattern Example



Can you find two patterns?

Pattern #1

Pattern #2

Name: _____

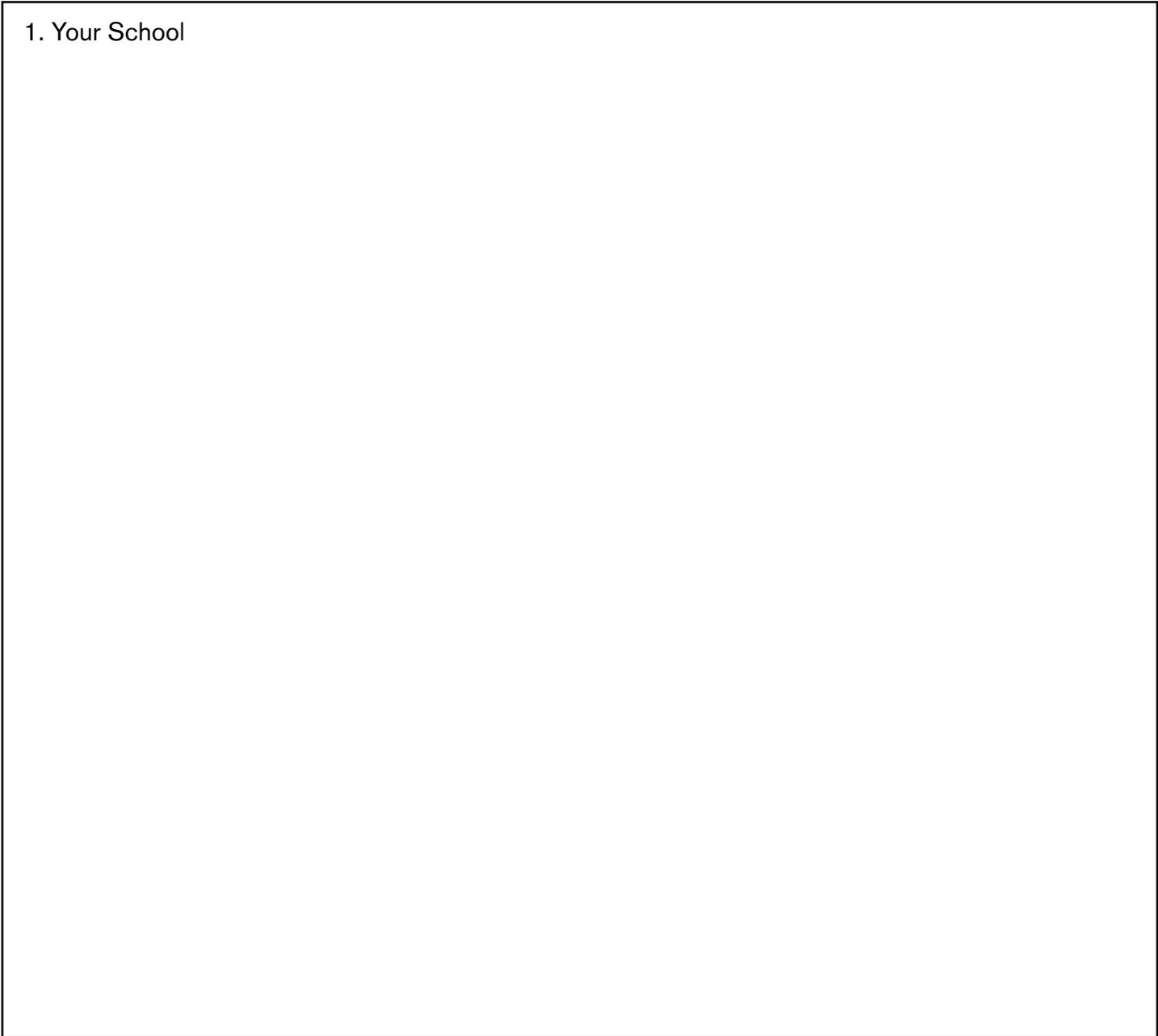
Student Worksheet

Patterns at School

Your school is an important building that contains shapes and patterns.

1. Examine the outside of your school and draw a picture of it including patterns. Color your school and the patterns.
2. Draw two patterns found on the outside of your school on the next page.
3. Write one thing about the way it looks.

1. Your School



2. Patterns

Pattern #1

Pattern #2

3. Describe

My school looks _____

because _____
