

Green by Design

This lesson was created as a supplement to the *Green by Design* 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 *Green by Design* program helps fourth through ninth grade students understand the issues associated with making environmentally friendly living decisions and the effects of these decisions on their surroundings. It encourages young people to explore how design decisions are made and how they impact the natural and built environment.

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
401 F Street, NW Washington, DC 20001
202.272.2448/www.NBM.org
Red Line Metro, Judiciary Square

What's In A Region?

While we often think about society's affect on the environment we do not typically consider the enormous affect the environment has on society. To produce good design architects need to think about the climate and geography of their building site. In this lesson, students will learn about how a region is defined and will then be introduced to 5 different regions in the United States. As they gather information about these regions they will discover the relationship between architectural design and the natural world. Students will work together to think about what challenges these climate and geographic features would cause when designing a home.

OBJECTIVES

Students will:

- map 5 regions of the United States
- compare and analyze the differences between regions
- identify the challenges for constructing homes in each region

NATIONAL STANDARDS OF LEARNING

English. 7, 8
Math Problem Solving
Science F
Social Studies 1, 2, 3
Technological Lit. . 8, 9, 10, 18, 19, 20
Visual Arts 3

DURATION

2 hours

MATERIALS

- *Mapping the US* student worksheet
- *Mapping the US: Map 1* (p. 34) or *Mapping the US: Map 2* (p. 55)
- *Investigating Regions* student worksheet (p. 35)
- Regional Maps (p. 36 - 40)
- Computer access to online atlas
- Atlas
- Markers, colored pencils
- Blank paper
- Climate Normals data sheet (*optional* p. 54)
- Topographical map

TEACHER PREP

- Divide students into 5 groups (these will be the groups that they work in at the Museum) and assign geographic regions
- Photocopy US map (1 for each student)
- Photocopy regional maps (1 for each student group)
- Photocopy *Investigating Regions* student worksheet (1 for each student group)
- Have ready access to research sources

Note: This activity can be adjusted in difficulty depending on the level of your students. You may decide to provide the resource sheets in this packet or have them gather the information from the internet or a library.

LESSON PROCEDURE

1. Define regions
2. Investigate 5 different US regions
3. Compare regions and discuss
4. Conclusion

GREEN VOCABULARY

Region, physical features, natural resources, climate, boundary, border

LESSON PLAN

1. Define regions

Ask students if they can name some of the geographic regions of the US.

Ask students why they think the country is divided into different regions? Is it helpful to divide the country into regions? How do they think the boundaries for the different regions are decided? Explain that regions are places that share similar characteristics. Using regions as categories helps people more easily understand these places. For example, in a grocery store we typically know where to find food based on how it's eaten or cooked—fresh apples with produce, apple sauce with processed fruit, etc.

2. Investigate 5 different US regions

Write the names of the 5 different regions on the blackboard/whiteboard. Have each student try to find these regions on the US map without giving them any resources. Depending on knowledge of students use *Mapping the US: Map 1* (states labeled, p. 34) or *Mapping the US: Map 2* (completely blank map, p. 55). Quickly discuss how students had various perceptions of the boundaries of each of these regions. Lead students to the idea that the boundaries of regions are fluid and can depend on the criteria being used to define the regions or who is defining the regions.

Divide students into 5 groups. Assign each group one of the following geographic regions:

- a. Northeast
- b. Mississippi Valley
- c. Southwest
- d. Midwest
- e. Pacific Northwest

Hand out blank regional maps (p. 36 - 40) to students (Note: some of these maps have additional states that we are not including as part of the region. These states are provided to give students more context of the area). Using online resources or atlases have students label the regions, including prominent physical geographic elements (mountain ranges, rivers, lakes, deserts, etc). Resources are provided in the appendix for answering the basic questions. On the student worksheets ask students to list additional characteristics of that region (climate, natural resources, etc) as well as what challenges might be faced in constructing a home for that region.

3. Compare regions

Ask a student from each group to be the presenter and share the information they discovered about their region. Be sure to have each group discuss why they think these states are grouped together and what the challenges are to constructing a building.

As a class discuss the similarities and differences of these regions. Have students discuss which region they think would be easy/difficult to live in. If they had a choice which region would they live in? Why?

4. Conclusion

Each region has climatic or geographical similarities. The characteristics of the region will affect how a building is constructed. Buildings in the same region may have similar designs.

Mapping the US Student Worksheet

NAME: _____

Locate the following regions and states on the map. Then color them the appropriate color.

Northeast (blue)

Connecticut
Maine
Massachusetts
New Jersey
New Hampshire
New York
Pennsylvania
Rhode Island
Vermont

Mississippi Valley (purple)

Arkansas
Mississippi
Louisiana

Midwest (green)

Illinois
Indiana
Iowa
Michigan
Minnesota
Ohio
Wisconsin

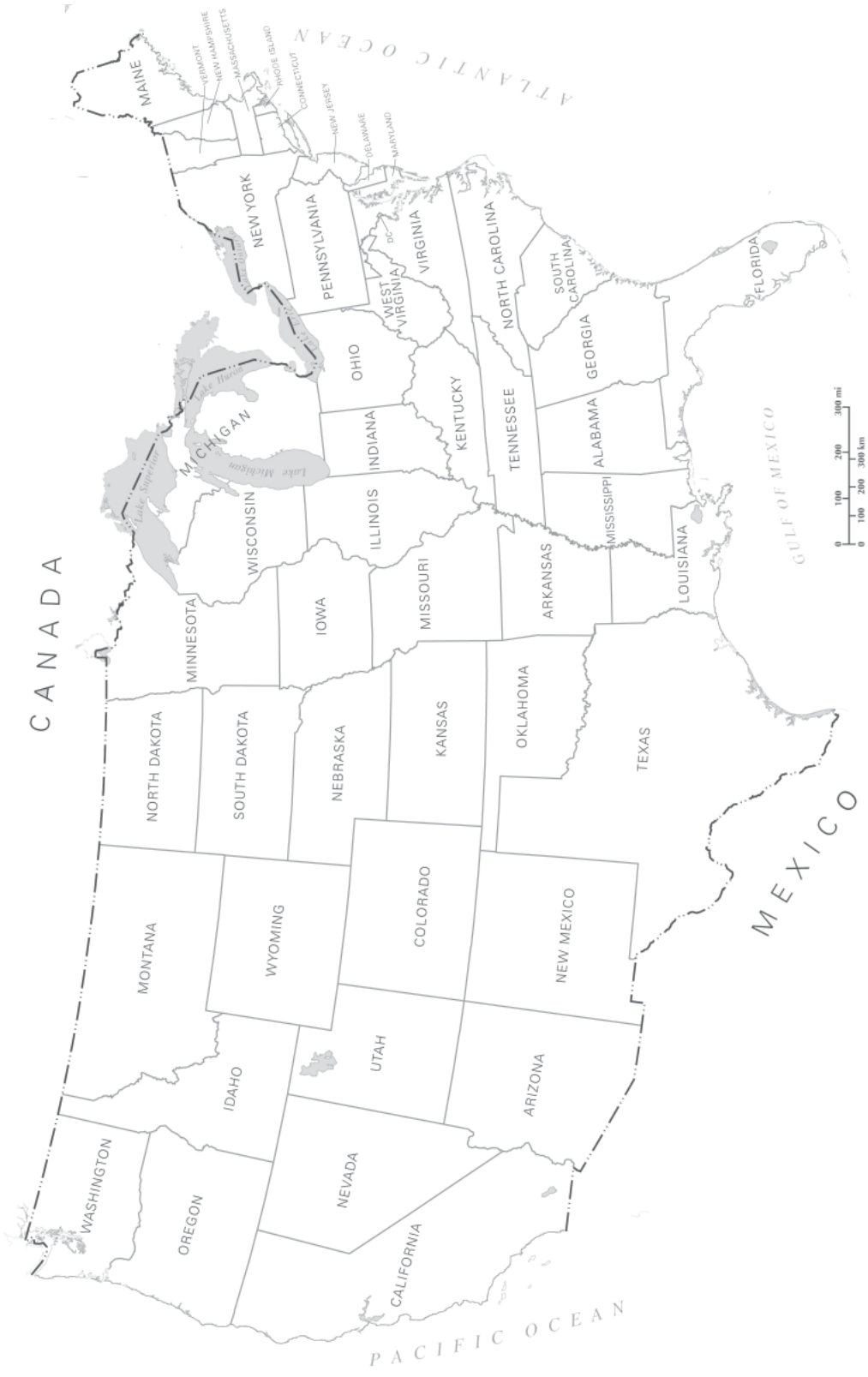
Pacific Northwest (pink)

Washington
Oregon

Southwest (orange)

Arizona
New Mexico

Mapping the US: Map 1



Investigating Regions Student Worksheet

STUDENT NAMES:

REGION:

Add the major rivers, lakes, mountain ranges, and other physical features to your map. Use the resources provided by your teacher to answer these questions about your region.

In your region:

What is the highest temperature?

What is the lowest temperature?

What is the total amount of precipitation for the year?

On a scale of 1(a little) to 4(a lot) how much wind does your region get?

Is your region at risk for natural disasters (earthquakes, tornadoes, hurricanes, floods)?

Why do you think these states are grouped together?

What are two challenges to constructing a building for this region?

Write one paragraph summarizing the information you discovered about your region.

Now select a person from your team to present your research to the class.

Be sure to include symbols on your map for:

Mountains/Mountain Range

Rivers/Lakes

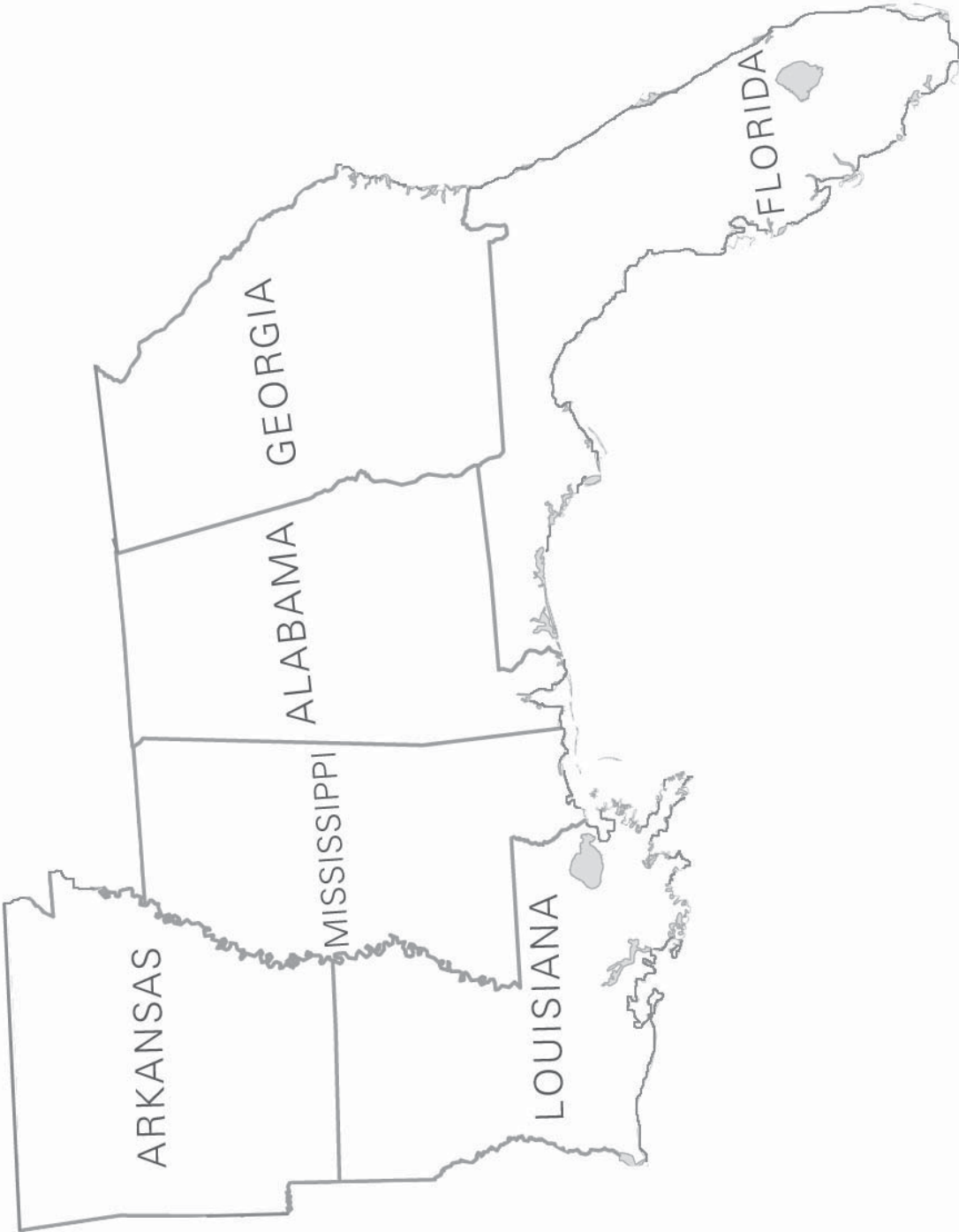
Forest/Thick vegetation

Deserts

Northeast Region



Mississippi Valley Region



Southwest Region



Midwest Region



Pacific Northwest Region

