MAPPING LANDFORMS

How can maps help us to explore and understand the varied geography of a state or country?

OVERVIEW

Students analyze landform maps of a state and the United States. They research and map states' landforms and then create a display.

For the complete activity with media resources, visit:
http://www.nationalgeographic.org/activity/mapping-landforms/

DIRECTIONS

1. Discuss different kinds of landforms.

Project the Landforms map and invite volunteers to point to the different landforms, name them, and read the descriptions. Show the photo gallery with examples of these landforms around the world. Ask students to describe experiences they have had of being near any of these landforms, or seeing them in a movie, in photos, or on a map. Ask:

- Which landform is the highest? (mountain)
- Which landforms are flat? (plateau, plain, coastal plain) How are they different? (one is high, one is low and close to a coast)
- Which are bodies of water? (bay, lake, river)
- Can you name other landforms that you don’t see on this drawing? (small streams or creeks, islands)
- Which of these landforms are near our hometown or in our state?
You can project your state map using the National Geographic MapMaker Interactive and find locations of the different landforms students describe.

2. Have students read a state landform map.

Project the Landform Map of Virginia. Explain that a landform map shows the locations of landforms in a place. These maps often use color to show mountains, hills, plateaus, plains, and more. They also show major bodies of water. Guide students to read the map with these prompts:

- Point to different colors on the map, and have students use the map key to name the type of landform.
- Find the Piedmont. A **piedmont** is land at the foot of mountains. Ask: *At the foot of what mountains is the Piedmont located?* (Blue Ridge Mountains)
- Find the Blue Ridge Mountains and the Allegheny Mountains. These are part of a group of mountains that stretches all the way from Canada to Alabama. Ask students if they can name that group. (Appalachian Mountains)
- Find the Potomac River. Ask: *Into what body of water does it flow?* (Chesapeake Bay)

3. Have students read a United States landform map.

Project the Landform Map of the United States. Have students point out the lakes, rivers, oceans, peninsulas, islands, mountains, hills, plains, and plateaus. Ask:

- *What are the highest mountains, marked on this map, in different areas of the country?*
- *In which states are they located?*
- *Of the different landform types, where do you think most of the United States’ food is grown?*
The plains are where most country’s agriculture is. Point out the Great Plains, one of the largest plains in the world, located in the center of the United States. Much of our food is grown in the rich soil of this plain. Also point out the plains in California where fruits and vegetables are grown and shipped all over the country. Have students name it. (Central Valley)

4. Have students research landforms in different states.

Individually or in small groups, assign students one or two states to research the landforms. Give students copies of the state tabletop maps from the National Geographic State MapMaker Kits and provide markers, colored pencils, atlases, encyclopedias, and/or access to additional state resources such as the National Geographic MapMaker Interactive (topo layer). Have a whole class discussion to create a key for the map and to decide which information should be included. Have students mark their state map(s) showing the landforms and marking cities, parks, and other major landmarks.

5. View the finished map.

Have a whole class discussion about the landform map. Ask: *What patterns of landforms do you see that you had not noticed before?* Students might point out that certain states have more lakes, rivers, or high areas than they realized. Have students write on an index card the name of a place they would like to visit in the state they researched. Have them explain why they would like to go there in 2-3 sentences. Display the maps with the cards attached to the maps in the hallway for others at school to see.

Modification

If computers are accessible, have students use drawing tools and markers to
create these maps on the **MapMaker Interactive**.

### Tip

To build spatial thinking skills, have students think about and describe the locations of different landforms. Have them use both cardinal directions and positional language such as *near, next to, inside of*, and so on.

### Modification

To create a larger wall display in Step 4, divide the tiles of the National Geographic MapMaker **MegaMap of the United States**, and have students mark the landforms for the land included on their tiles.

### Informal Assessment

Check student’s state maps for correct representation of the landforms of that state.

### Extending the Learning

- Have students work in small groups to build 3-D relief maps of the United States or their state, with landforms labeled. Have students choose material such as colored modeling clay or paper mache and paint. They can also be creative with cake and icing or other foods to make the shapes and colors of the land.

- Have students use the **MapMaker Interactive** to see what else they can learn about landforms in their assigned state from the activity or the state where they live. Direct students to explore the different base maps—satellite, topographic, street, and so on—to see how different maps often highlight different landforms. See what landforms students can identify on the MapMaker Interactive that were not included on the MapMaker Kit tabletop maps. Have students use the drawing tools to identify and label different
features and make an online map of landforms in their state.

- Explain to students that people can visit and explore many of the landforms in the U.S. by visiting national parks. Have students use the National Park Service website and Google Earth to locate parks that feature different landforms. Have students map and find photos for the landforms they would see in parks such as the following:
  - Rocky Mountain National Park, Colorado (mountains, lakes)
  - Grand Canyon National Park, Arizona (plateaus, rivers)
  - Crater Lake National Park (mountains, lakes)
  - Apostle Islands National Park, Wisconsin and Isle Royale National Park, Michigan (islands, lakes)
  - Smoky Mountains National Park, North Carolina and Tennessee (Mountains, lakes, rivers)
  - Denali National Park, Alaska (Mountains, lakes, rivers)
  - Cuyahoga Valley National Park, Ohio (Valleys, hills)

- Have students create an online, interactive GeoTour of landforms in their state or across the country. Go to Creating Content with MapMaker Interactive to find instructions and models.

OBJECTIVES

Subjects & Disciplines

Geography
- Cartography

Learning Objectives

Students will:

- identify landforms
• locate landforms on a map
• create a display featuring landforms in the United States

Teaching Approach

• Learning-for-use

Teaching Methods

• Discussions
• Visual instruction

Skills Summary

This activity targets the following skills:

• 21st Century Student Outcomes
  • Learning and Innovation Skills
    • Communication and Collaboration
  • Critical Thinking Skills
    • Understanding
• Geographic Skills
  • Analyzing Geographic Information

National Standards, Principles, and Practices

NATIONAL COUNCIL FOR SOCIAL STUDIES CURRICULUM STANDARDS
• **Theme 3:**
People, Places, and Environments

**NATIONAL GEOGRAPHY STANDARDS**

• **Standard 1:**
How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information

• **Standard 3:**
How to analyze the spatial organization of people, places, and environments on Earth's surface

**COMMON CORE STATE STANDARDS FOR ENGLISH LANGUAGE ARTS & LITERACY**

• **Reading Standards for Informational Text K-5:**
Key Ideas and Details. RI.4.1

**THE COLLEGE, CAREER & CIVIC LIFE (C3) FRAMEWORK FOR SOCIAL STUDIES STATE STANDARDS**

• **Geographic Representations: Spatial Views of the World: D2.Geo.2.3-5:**
Use maps, satellite images, photographs, and other representations to explain relationships between the locations of places and regions and their environmental characteristics.

**PREPARATION**

**What You’ll Need**

**MATERIALS YOU PROVIDE**

• Colored pencils
Encyclopedias (online access or hard copies)
Markers
Atlases (1 per student or 1 per pair)
Colored modeling clay, paper mache, paint (optional)
Pens
Travel magazines (optional)

**REQUIRED TECHNOLOGY**

- Internet Access: Required
- Tech Setup: 1 computer per classroom, 1 computer per pair, Projector

**PHYSICAL SPACE**

- Classroom

**GROUPING**

- Large-group instruction

**RESOURCES PROVIDED: MAPS**

- National Geographic Education: State MapMaker Kits

**RESOURCES PROVIDED: INTERACTIVES**

- National Geographic Education MapMaker Interactive

**RESOURCES PROVIDED: IMAGES**

- Landforms
- Landforms
- Landform Map of Virginia
- Landform Map of the United States
Background Information

Earth has a myriad of landforms: huge mountains, rounded hills, coastal plains that roll to the sea, plateaus that jut above surrounding lands, and more. Physical characteristics such as these define and distinguish the places in our world. The physical features of a place often influence how people live and work there.

Prior Knowledge

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Recommended Prior Activities

- None

Vocabulary

<table>
<thead>
<tr>
<th>Term</th>
<th>Part of Speech</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>bay</td>
<td>noun</td>
<td>body of water partially surrounded by land, usually with a wide mouth to a larger body of water.</td>
</tr>
<tr>
<td>coastal plain</td>
<td>noun</td>
<td>low, flat land lying next to the ocean.</td>
</tr>
<tr>
<td>lake</td>
<td>noun</td>
<td>body of water surrounded by land.</td>
</tr>
<tr>
<td>landform</td>
<td>noun</td>
<td>specific natural feature on the Earth's surface.</td>
</tr>
<tr>
<td>map skills</td>
<td>noun</td>
<td>skills for reading and interpreting maps, from learning basic map conventions to analyzing and comprehending maps to address higher-order goals.</td>
</tr>
<tr>
<td>mountain</td>
<td>noun</td>
<td>landmass that forms as tectonic plates interact with each other.</td>
</tr>
<tr>
<td>Term</td>
<td>Part of Speech</td>
<td>Definition</td>
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<td>--------</td>
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<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>national park</td>
<td>noun</td>
<td>geographic area protected by the national government of a country.</td>
</tr>
<tr>
<td>piedmont</td>
<td>noun</td>
<td>area at the bottom of a mountain.</td>
</tr>
<tr>
<td>plain</td>
<td>noun</td>
<td>flat, smooth area at a low elevation.</td>
</tr>
<tr>
<td>plateau</td>
<td>noun</td>
<td>large region that is higher than the surrounding area and relatively flat.</td>
</tr>
<tr>
<td>river</td>
<td>noun</td>
<td>large stream of flowing fresh water.</td>
</tr>
<tr>
<td>valley</td>
<td>noun</td>
<td>depression in the Earth between hills.</td>
</tr>
</tbody>
</table>

**For Further Exploration**

**Images**
- National Geographic Education: U.S. National Parks—Satellite Images
- National Geographic Education: Lakes and Rivers

**Websites**
- National Geographic Science: Surface of the Earth
- National Park Service

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